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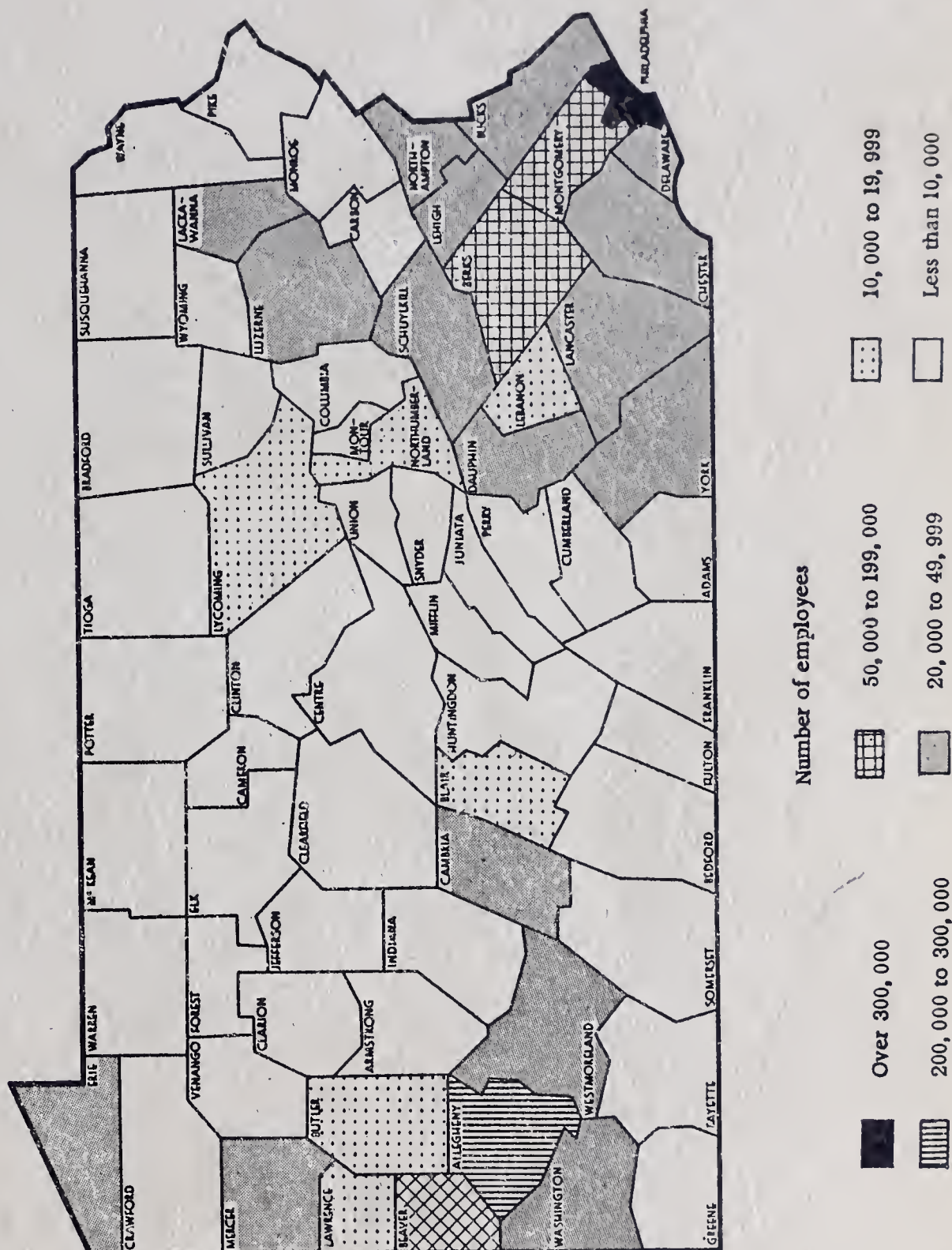
LEADING MANUFACTURING COUNTIES  
IN PENNSYLVANIA



**BUREAU OF STATISTICS**  
**Kenneth Masters, Director**  
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**SPECIAL RELEASE S-1**

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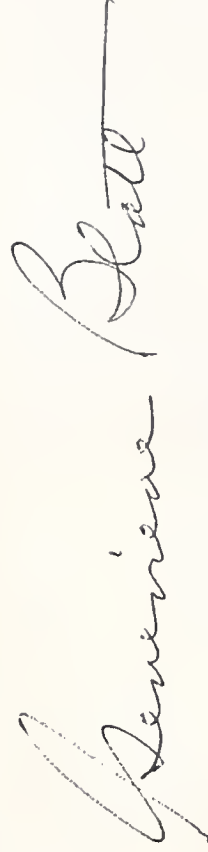
## LEADING MANUFACTURING COUNTIES IN PENNSYLVANIA

### FOREWORD

The Department of Internal Affairs is pleased to present the first of a special series of releases designed to assist in the study and development of the industry of Pennsylvania. In addition to other uses, this release can be used as a supplement to the Pennsylvania Industrial Directory published by this Department.

It is most impressive to note that Pennsylvania counties rank among the leading manufacturing counties in the United States for 324 industries. Philadelphia ranks as a leading county for 201 industries. Allegheny County ranks first among all counties in the nation for 12 industries and ranks among all leading counties for 90 industries.

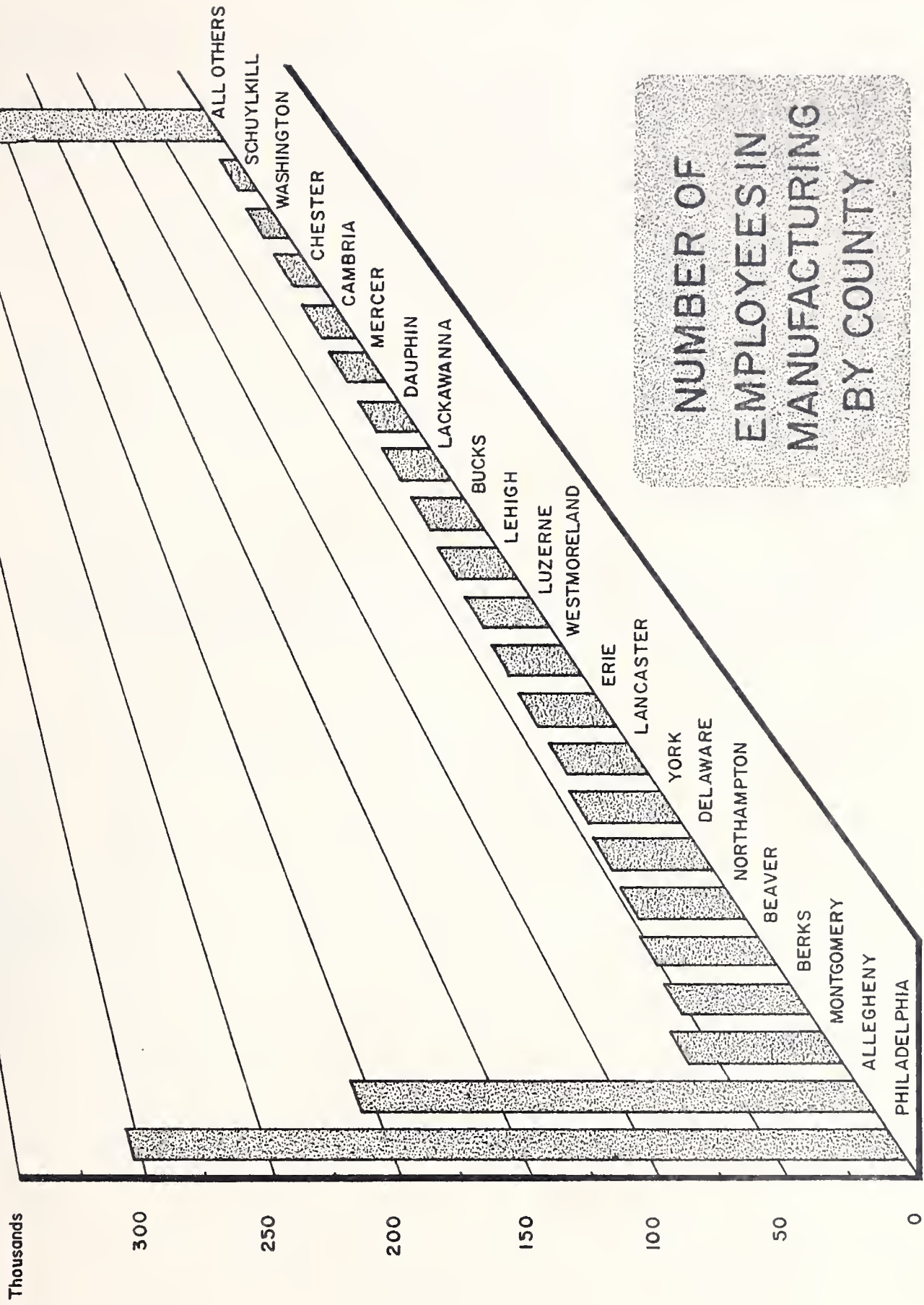
We are grateful to the many users of our statistics who have made helpful comments and criticisms in the past, and we will appreciate any suggestions which readers of this release may care to offer, too. Our sole object is to provide useful and accurate statistical information.



Genevieve Blatt  
Secretary of Internal Affairs



# NUMBER OF EMPLOYEES IN MANUFACTURING BY COUNTY







The purpose of this report is to present information on the extent to which employment in each of the manufacturing industries in Pennsylvania is concentrated by county.

Table One, "Pennsylvania Counties Among the Leading Manufacturing Counties in the United States by Industry, 1957" was compiled from data published in the July 10, 1958 issue of Sales Management. The Sales Management research staff estimated industry employment for each leading county on the basis of information received from local Chambers of Commerce, planning agencies, and other sources. Based on these estimates there were the following number of manufacturing industries in which Pennsylvania counties ranked among the nation's leaders in 1957:

County	All leading ranks	Number of industries in which the county ranks:									
		First	Second	Third	Fourth	Fifth	Sixth to tenth	Eleventh and over			
All counties	722	31	45	50	43	37	201	315			
Adams	2							2			
Allegheny	90	12	2	5	4	4	19	44			
Armstrong	5			2				3			
Beaver	20		2	1	1		9	6			
Berks	22	1	2	2			9	8			
Blair	4							3			
Bradford	3				1		2	1			
Bucks	10					1	6	3			
Butler	6						2	4			
Cambria	9						3	6			
Cameron	1							1			
Carbon	6		1				3	2			
Centre	4							3			
Chester	6							1			
Clarion	1							1			
Crawford	3			1				1			
Cumberland	3							1			
Dauphin	8	1	1				2	1			
Delaware	22	2		2	1	1	6	10			
Elk	2		1					1			
Erie	18		1		1	1	3	12			
Fayette	6	1						5			
Franklin	3						1	2			
Huntingdon	3		1					2			
Indiana	1							1			
Jefferson	4							1			
Lackawanna	18	1		1			5	8			
Lancaster	24	1	2		3		6	11			
Lawrence	7			1			3	2			
Lebanon	5							2			
Lehigh	19							10			
Luzerne	19		1	1	3		7	8			
Lycoming	14		1		1		3	4			
McKean	5							2			
Mercer	5		1				2	2			
Mifflin	1							1			
Monroe	3							1			
Montgomery	35			1	2	3	17	12			
Northampton	17	1	2		1		7	6			
Northumberland	4			1	1		2	4			
Philadelphia	201	10	22	27	16	13	49	64			
Schuylkill	12			2			3	2			
Susquehanna	2							3			
Tioga	3							2			
Union	1						1	3			
Venango	5						2	2			
Warren	2							4			
Washington	9		1		1		3	4			
Westmoreland	21		1	2	2		5	9			
York	23	1	1		2	2	7	10			

Table Two, "Number of Employees in Leading Counties in Pennsylvania by Industry, 1956" presents actual industry employment figures for the five leading counties in Pennsylvania for every four-digit Standard Industrial Classification (SIC) manufacturing industry group in Pennsylvania. The number of industry groups ranking among the top five ranks for each county for 1956 is as follows:

County	Total industries ranking among the top five ranks	Number of industries in which the county ranks:				
		First	Second	Third	Fourth	Fifth
All counties	1,745	429	388	350	310	268
Adams	7	1	1	2	1	2
Allegheny	187	41	70	41	16	19
Armstrong	9	2	3	1	2	1
Beaver	30	5	9	5	7	4
Berks	4	1	1	1	1	
Blair	70	11	18	13	20	8
Bradford	10	1	3	1	3	2
Bucks	8	1	1	3	1	2
Butler	48	9	10	9	10	10
Cambria	14	2	1	2	6	3
Cameron	9	2	2	1	2	2
Carbon	8	1	1	1	1	3
Centre	3	2	1			
Chester	33	2	4	7	9	11
Clarion	3	1	1	3	1	2
Crawford	9	2	1	3	2	2
Columbia	10	3	1	1	5	2
Cumberland	13	2	1	4	4	2
Dauphin	15	2	3	6	2	4
Delaware	23	4	5	3	2	9
Elk	71	11	20	8	18	14
Erie	11	2	2	2	3	3
Fayette	56	12	12	13	12	7
Franklin	14	4	4	2	3	1
Greene	11	2	2	2	3	2
Huntingdon	6	1	1	1	3	1
Indiana	8	1	1	4	2	1
Jefferson	10	1	3	3	2	1
Lackawanna	46	3	14	8	9	12
Lancaster	82	14	21	13	18	16
Lawrence	23	3	6	4	9	1
Lebanon	18	2	5	2	5	4
Lehigh	57	5	12	15	16	9
Luzerne	57	9	13	18	8	9
Lycoming	27	2	7	6	3	4
McKean	16	2	7	1	2	3
Mercer	13	3	3	3	1	1
Mifflin	3	1	1	1	1	1
Monroe	11	1	3	2	4	1
Montgomery	108	20	17	36	15	20
Montour	2			1	1	
Northampton	52	13	4	16	10	9
Northumberland	17	4	2	3	2	6
Perry	2			1	1	
Philadelphia	297	175	55	24	20	23
Pike	2					
Potter	3	1	1	1	1	1
Schuylkill	20	6	4	3	6	1
Snyder	2			1	1	1
Somerset	2		1	1	1	1
Susquehanna	2			1	2	1
Tioga	6		3	2	1	1
Union	2			1	1	1
Venango	9	2	1	2	3	1
Warren	7	3	4	6	3	3
Washington	22					6
Wayne	3		1	1	1	1
Westmoreland	35	7	11	7	5	5
York	85	18	12	29	16	10

Although there were 429 manufacturing industry groups in the state in 1956, 41 industries were concentrated in one county only, 38 in two counties, 40 in three counties, and 42 in 4 counties.

In Adams county, for example, there was one manufacturing industry in 1956 which ranked first in Adams County among all Pennsylvania counties, namely the Rubber footwear industry. Actual employment in 1956 based on the 1956 Industrial Census taken by the Bureau of Statistics was 831 employees. Based on the Sales Management industry employment estimates for 1957, Adams County ranked twelfth in the United States among all counties in which Rubber footwear plants are located.

County Code numbers used in table two are as follows:

Adams	1	Clinton	18	Lackawanna	35	Pike	52
Allegheny	2	Columbia	19	Lancaster	36	Potter	53
Armstrong	3	Crawford	20	Lawrence	37	Schuylkill	54
Beaver	4	Cumberland	21	Lebanon	38	Snyder	55
Bedford	5	Dauphin	22	Lehigh	39	Somerset	56
Berks	6	Delaware	23	Luzerne	40	Sullivan	57
Blair	7	Elk	24	Lycoming	41	Susquehanna	58
Bradford	8	Erie	25	McKean	42	Tioga	59
Bucks	9	Fayette	26	Mercer	43	Union	60
Butler	10	Forest	27	Mifflin	44	Venango	61
Cambria	11	Franklin	28	Montroe	45	Warren	62
Cameron	12	Fulton	29	Montgomery	46	Washington	63
Carbon	13	Greene	30	Montour	47	Wayne	64
Centre	14	Huntingdon	31	Northampton	48	Westmoreland	65
Chester	15	Indiana	32	Northumberland	49	Wyoming	66
Clarion	16	Jefferson	33	Perry	50	York	67
Clearfield	17	Junata	34	Philadelphia	51		

In addition to research uses, this report can be used as a supplement to the Pennsylvania Industrial Directory published by the Department of Internal Affairs. Information on the Industrial Directory and on other statistical releases can be obtained by writing to the Bureau of Statistics, Department of Internal Affairs, Harrisburg, Pennsylvania.

Source: Sales Management Survey of Industrial Buying Power, July 10, 1958.



Code	Industry	County and rank
20	Food and kindred products	Philadelphia-3; Erie-19; Dauphin-49; York-76; Lancaster-86
2011	Meat packing and slaughtering	Allegheny-18
2013	Prepared meats	Philadelphia-2
2021	Creamery butter	Allegheny-16
2024	Ice cream and ices	Philadelphia-1; Allegheny-6
2025	Special dairy products	Clearfield-14
2027	Fluid milk and other products	Philadelphia-2; Allegheny-3
2033	Canned fruits and vegetables	Allegheny-12; Adams-17; Chester-20
2035	Pickles and sauces	Allegheny-11; Philadelphia-12
2037	Frozen fruits and vegetables	Erie-16
2045	Flour mixes	Montgomery-9
2051	Bread and related products	Philadelphia-3; Allegheny-11
2052	Biscuits and crackers	Philadelphia-3; Allegheny-14; Berks-19
2062	Cane sugar refining	Philadelphia-1
2071	Confectionery products	Philadelphia-2; Allegheny-11; Berks-14
2072	Chocolate and cocoa products	Dauphin-1; Lancaster-6; Philadelphia-7
2073	Chewing gum	Philadelphia-4; Delaware-8
2081	Bottled soft drinks	Philadelphia-2; Allegheny-10
2082	Beer and ale	Allegheny-11; Philadelphia-16
2085	Distilled liquors, except brandy	Philadelphia-3; Armstrong-11
2095	Flavorings	Allegheny-12; Philadelphia-16
2097	Manufactured ice	Philadelphia-9
2098	Macaroni and spaghetti	Lebanon-7; Allegheny-9
2099	Miscellaneous food preparations	Philadelphia-14
21	Tobacco products	Philadelphia-6; Luzerne-8; York-15; Lackawanna-17; Lancaster-19; Lehigh-25; Centre-37; Northumberland-45; Dauphin-59; Berks-66; Adams-73
2111	Cigarettes	Philadelphia-9
2121	Cigars	Philadelphia-2; Luzerne-3; York-4; Lackawanna-7; Lehigh-9; Lancaster-11
2141	Tobacco stemming and redrying	Lancaster-12
22	Textile mill products	Philadelphia-1; Berks-12; Lancaster-25; Montgomery-45; Luzerne-71; Lehigh-73; Lackawanna-74; Delaware-77; York-83
2211	Scouring and combing plants	Philadelphia-4
2212	Woolen and worsted yarn mills, except carpet yarn	Delaware-8; Philadelphia-9; Allegheny-18
2213	Woolen and worsted fabrics and felts	Philadelphia-9
2216	Finishing wool textiles	Philadelphia-2; Bucks-8
2222	Yarn throwing mills	Lackawanna-1; Luzerne-2; Philadelphia-8; Union-10; Lehigh-11; Columbia-12
2234	Synthetic broad-woven fabrics	Luzerne-9; Lehigh-12
2241	Narrow fabric mills	Philadelphia-1; Lycoming-5; Berks-6; York-10
2251	Full-fashioned hosiery mills	Berks-1; Philadelphia-6; Montgomery-7; Bucks-9; Northampton-10
2252	Seamless hosiery mills	Berks-6; Philadelphia-19
2253	Knit outerwear mills	Philadelphia-3; Montgomery-8; Blair-12; Lebanon-17; Schuylkill-19
2254	Knit underwear mills	Berks-2; Schuylkill-3; Lancaster-7; Bradford-11; Chester-17; Philadelphia-19
2256	Knit fabric mills	Northampton-2; Philadelphia-7; Berks-10; Lehigh-11; Luzerne-16
2259	Knitting mills n.e.c.	Philadelphia-4
2261	Finishing textiles, except wool	Philadelphia-7
2271	Wool carpets and rugs	Philadelphia-2
2273	Carpets and rugs except wool	Philadelphia-2; Columbia-4; Montgomery-8; Cumberland-9; Bucks-19
2274	Linoleum and other hard surface floor coverings	Delaware-5; Philadelphia-17; Lackawanna-19
2281	Fur felt hats and hat bodies	Lancaster-1; Delaware-4; Lehigh-14; Philadelphia-15
2282	Wool felt hats and hat bodies	Philadelphia-2; Northumberland-3; Berks-6
2291	Felt goods n.e.c.	Lancaster-2
2292	Lace goods	Chester-5; Philadelphia-17
2293	Paddings and upholstery filling	Philadelphia-2; Lackawanna-4
2294	Processed textile waste	Philadelphia-4
2299	Textile goods n.e.c.	Philadelphia-3 Philadelphia-1; Lehigh-5; York-9; Luzerne-12

PENNSYLVANIA COUNTIES AMONG THE LEADING MANUFACTURING COUNTIES IN THE UNITED STATES BY INDUSTRY, 1957

Code	Industry	County and rank
23	Apparel and related products	Philadelphia-4; Luzerne-10; Lackawanna-16; Schuylkill-17; Northampton-20; Lehigh-23; Lancaster-37; York-41; Montgomery-42; Northumberland-43; Berks-53; Lebanon-54; Dauphin-58; Bucks-61; Cambria-66; Carbon-69; Lycoming-71; Franklin-76; Columbia-83
231A	Manufactures of men's and boys' suits and coats	Philadelphia-3
231B	Jobbers of men's and boys' suits and coats	Philadelphia-3
231C	Contractors of men's and boys' suits and coats	Philadelphia-1; Montgomery-5; Franklin-8; Huntingdon-16
231D	Men's and boys' suits and coats, n.e.c.	Philadelphia-2
2312	Suit and coat findings	Schuylkill-3; Luzerne-4; Lehigh-7; Northumberland-8; Lycoming-13; York-14; Philadelphia-18; Columbia-19
2321	Men's dress shirts and nightwear	Philadelphia-6
2323	Men's and boys' neckwear	Philadelphia-3; Lackawanna-4; Northampton-9; Luzerne-10; Fayette-17
2325	Men's and boys' cloth hats	Philadelphia-6
2327	Separate trousers	Philadelphia-3; Blair-16
2328	Work shirts	Philadelphia-1; Luzerne-13
2329	Men's and boys' clothing, n.e.c.	Northampton-2; Philadelphia-5; Schuylkill-7; Luzerne-8; Carbon-10; Berks-11; Lancaster-14; Lackawanna-17; Lycoming-18; Delaware-19; Monroe-20
2331	Blouses	Luzerne-4; Philadelphia-11; Lackawanna-12; Schuylkill-14
2333	Dresses, unit price	Philadelphia-3; Northumberland-8; Lackawanna-10; Schuylkill-11; Cambria-18
2334	Dresses, dozen price	Philadelphia-13
2337	Women's suits, coats, and skirts	Lehigh-10; Luzerne-17
2339	Women's outerwear	Lancaster-4; Lehigh-5; Berks-13; Northampton-14; Lebanon-15; Schuylkill-19
2341	Women's and children's underwear	Luzerne-7; Cambria-17
2342	Corsets and allied garments	Philadelphia-6
2351	Millinery	Philadelphia-2; Lackawanna-3; Luzerne-4; Carbon-8; Montgomery-10; Lancaster-11; York-12; Dauphin-15
2361	Children's dresses	Philadelphia-2; Lancaster-5; Lackawanna-7; Westmoreland-13
2363	Children's coats	Philadelphia-4; Lehigh-8; Dauphin-15; Luzerne-20
2369	Children's outerwear, n.e.c.	Philadelphia-5
2371	Fur goods	Lackawanna-7; Tioga-12
2381	Fabric dress gloves	Schuylkill-6; Cumberland-7; Lycoming-18
2384	Robes and dressing gowns	Lancaster-14; Lehigh-16; Philadelphia-18
2385	Waterproof outer garments	Philadelphia-2; Dauphin-10
2386	Leather and sheep-lined clothing	Philadelphia-6; Delaware-7; Luzerne-10
2387	Belts	Northampton-4; Lebanon-6
2388	Handkerchiefs	Washington-5; Montgomery-8; Philadelphia-10
2389	Apparel, n.e.c.	Philadelphia-5; Allegheny-14
2391	Curtains and draperies	Philadelphia-11; Lehigh-15
2392	Housefurnishings, n.e.c.	Philadelphia-20
2393	Textile bags	Philadelphia-3; Allegheny-19
2394	Canvas products	Philadelphia-7
2395	Tucking, pleating, and stitching	Lycoming-9; Philadelphia-10
2396	Trimings and art goods	Philadelphia-5
2397	Schiffli-machine embroideries	Philadelphia-10
2398	Embroideries, except Schiffli	Philadelphia-5; Montgomery-17; Berks-19
2399	Textile products, n.e.c.	
24	Lumber and wood products	Philadelphia-83
2433	Prefabricated wood products	Philadelphia-15; Lehigh-19
2443	Cigar boxes	York-1
2445	Cooperage	Venango-6
2499	Wood products, n.e.c.	McKean-17

25	Furniture and fixtures	Philadelphia-6; York-20; Allegheny-39; Lycoming-55; Erie-62; Lackawanna-90; Luzerne-94; Montgomery-100
2511	Wood furniture not upholstered	York-11
2512	Household furniture upholstered	Lycoming-13; Philadelphia-18
2514	Metal household furniture	Philadelphia-5; Allegheny-14; Lackawanna-18
2515	Mattresses and bedsprings	Allegheny-15
2521	Wood office furniture	Lycoming-10; Cumberland-11
2522	Metal office furniture	York-6; Philadelphia-8; Erie-15
2531	Public building and related furniture	Philadelphia-13; Allegheny-15
2532	Professional furniture	Cambria-8
2541	Partitions and fixtures	Philadelphia-7
2561	Window and door screens	Philadelphia-5; Erie-11; McKean-12
2563	Venetian blinds	Lycoming-2; Philadelphia-7; Allegheny-9
2591	Restaurant furniture	York-2
26	Paper and allied products	Philadelphia-4; Allegheny-51; Erie-60; Delaware-66; York-69; Montgomery-71; Bucks-74; Chester-79; Blair-82; Northampton-85
2611	Pulp mills	Blair-20
2613	Building paper and board mills	Montgomery-15; Erie-17
2641	Paper coating and glazing	Bucks-10
2651	Envelopes	Philadelphia-7
2661	Paper bags	Philadelphia-20
2671	Paperboard boxes	Philadelphia-2; Allegheny-17
2674	Fiber cans, tubes, and drums	Berks-3; Philadelphia-11
2693	Wallpaper	York-4; Bucks-7
2699	Paper and board products, n.e.c.	Northampton-11; Philadelphia-15; Delaware-16
27	Printing and publishing	Philadelphia-3; Allegheny-17; Lackawanna-65; York-68; Delaware-78; Lancaster-84; Dauphin-87; Northampton-100; Westmoreland-103; Montgomery-104
2711	Newspapers	Philadelphia-5; Allegheny-7
2721	Periodicals	Philadelphia-2
2731	Books, publishing and printing	Philadelphia-4
2732	Book printing	York-8; Lackawanna-11; Philadelphia-17
2741	Miscellaneous publishing	Allegheny-15; Westmoreland-19
2751	Commercial printing	Philadelphia-3
2761	Lithographing	Philadelphia-4; Allegheny-16
2771	Greeting cards	Philadelphia-16
2781	Bookbinding	Philadelphia-4
2782	Blank books and paper ruling	Philadelphia-11
2783	Loose-leaf binders and devices	Delaware-14
2791	Typesetting	Philadelphia-3; Lancaster-11; Allegheny-19
2792	Engraving and plate printing	Philadelphia-3
2793	Photoengraving	Philadelphia-3; Allegheny-17
2794	Electrotyping and stereotyping	Philadelphia-3
28	Chemicals and allied products	Philadelphia-4; Allegheny-37; Bucks-68; Delaware-72; Schuylkill-76; Mifflin-81
2811	Sulphuric acid	Fayette-12; Bucks-14
2822	Intermediates and organic colors	Beaver-7; Philadelphia-15
2823	Plastics materials and elastomers	Philadelphia-5; Bucks-6; Allegheny-13
2825	Synthetic fibers	Mifflin-11
2826	Explosives	Schuylkill-6
2829	Industrial organic chemicals, n.e.c.	Philadelphia-17; Allegheny-20
2831	Biological products	Delaware-3; Lancaster-8
2833	Medicinal chemicals including botanicals	Northumberland-4
2834	Pharmaceutical preparations	Philadelphia-4
2841	Soap and glycerin	Philadelphia-12
2842	Cleaning and polishing products	Philadelphia-9
2843	Sulfonated oils and assistants	Philadelphia-2
2851	Paints and varnishes	Philadelphia-6; Allegheny-11
2852	Inorganic color pigments	Carbon-3; Northampton-7; Philadelphia-17
2871	Fertilizers	Philadelphia-16
2886	Grease and tallow	Philadelphia-6
2887	Fatty acids	Philadelphia-3
2891	Printing ink	Philadelphia-2
2894	Glue and gelatin	Philadelphia-4; Berks-10
2896	Compressed and liquified gases	Delaware-8; Allegheny-10; Philadelphia-12; Armstrong-15
2897	Insecticides and fungicides	Allegheny-8
2899	Chemical products, n.e.c.	Montgomery-11; Philadelphia-12; Allegheny-15; Butler-16



Code Industry

County and rank

29	Petroleum and coal products	Philadelphia-6; Delaware-8; Allegheny-11; Beaver-37; Venango-38; McKean-51; Cambria-52; Butler-59; Bucks-67; Northampton-74; Montgomery-75; York-87; Warren-92
2911	Petroleum refining	Delaware-7; Philadelphia-8
2931	Beehive coke ovens	Fayette-1; Westmoreland-2
2932	Byproduct coke ovens	Allegheny-1; Beaver-7; Cambria-15; Dauphin-18
2952	Roofing felts and coating	Philadelphia-7; York-15
2992	Lubricants, n.e.c.	Philadelphia-4; Montgomery-7; Allegheny-10; Venango-20
2999	Petroleum and coal products, n.e.c.	Allegheny-3
30	Rubber products	Montgomery-12; Philadelphia-23; Erie-46; Westmoreland-58; Bucks-84; Cumberland-91; Chester-97
3011	Tires and inner tubes	Montgomery-4
3021	Rubber footwear	Adams-12
3099	Rubber industries, n.e.c.	Philadelphia-14
31	Leather and leather products	Philadelphia-12; Lancaster-22; Luzerne-27; Berks-29; Dauphin-32; York-35; Cumberland-37; Adams-45; Blair-51; Lackawanna-63; Tioga-64; Lycoming-65; Schuylkill-67; Lebanon-69; Lehigh-85
3111	Leather tanning and finishing	Philadelphia-2; Tioga-11
3121	Industrial leather belting	Philadelphia-5
3131	Footwear cut stock	York-12; Lycoming-14
3141	Footwear, except rubber	Lancaster-14
3142	House slippers	Susquehanna-16
3161	Luggage	Philadelphia-9
3171	Handbags and purses	Philadelphia-9; Montgomery-18
3172	Small leather goods	Berks-10; Philadelphia-14
3199	Leather goods, n.e.c.	Philadelphia-7
32	Stone, clay, and glass products	Allegheny-3; Washington-8; Westmoreland-14; Montgomery-19; Armstrong-20; Northampton-22; Philadelphia-31; Lawrence-39; Jefferson-52; Beaver-55; Fayette-58; Clearfield-73; Lancaster-74; Lehigh-82; McKean-90; Centre-95; Huntingdon-96
3211	Flat glass	Allegheny-1; Armstrong-3; Westmoreland-10; Butler-17
3221	Glass containers	Washington-2; Fayette-15; Jefferson-18; Clarion-19
3229	Pressed and blown glassware, n.e.c.	Westmoreland-3; Washington-7; Allegheny-12; Tioga-14; Huntingdon-15
3231	Products of purchased glass	Allegheny-9; Philadelphia-10; McKean-12; Fayette-14
3241	Cement hydraulic	Northampton-1; Lehigh-5; Allegheny-17; Lawrence-20
3251	Brick and hollow tile	Beaver-12
3253	Clay floor and wall tile	Montgomery-4; Bucks-6
3254	Clay sewer pipe	Cambria-11; Montgomery-12; Armstrong-13; Jefferson-14
3255	Clay refractories	Clearfield-2; Beaver-7; Centre-11; Washington-17
3261	Vitreous plumbing fixtures	Armstrong-3; Lawrence-7
3262	Vitreous-china food utensils	Lawrence-3; Jefferson-5; Beaver-8
3263	Earthenware food utensils	Washington-10; York-17
3264	Porcelain electrical supplies	Westmoreland-3; Butler-19
3265	China decorating for the trade	Allegheny-1
3269	Pottery products, n.e.c.	Butler-8; Centre-7
3271	Concrete products	Allegheny-14
3272	Gypsum products	Philadelphia-7
3274	Lime	Philadelphia-7
3281	Cut-stone and stone products	Centre-2; Lebanon-7; Chester-10; York-11
3291	Abrasive products	Northampton-10; Montgomery-12
3292	Asbestos products	Philadelphia-5; Chester-14
3293	Gaskets and asbestos insulations	Lancaster-4; Montgomery-6; Philadelphia-15
3295	Minerals, ground or treated	Montgomery-3; Philadelphia-9
3297	Non-clay refractories	Allegheny-13
3298	Statuary and art goods	Huntingdon-2; Blair-4; Montgomery-6; Philadelphia-9; Westmoreland-10; Allegheny-13; Centre-18; Butler-20
3299	Non-metallic mineral products, n.e.c.	Philadelphia-3
		Westmoreland-5

Code	Industry	County and rank
33	Primary metal products	Allegheny-1; Beaver-8; Northampton-14; Westmoreland-15; Cambria-16; Washington-23; Bucks-26; Philadelphia-28; Mercer-29; Montgomery-33; Berks-37; Dauphin-38; Chester-45; Erie-52; Butler-62; Lebanon-65; Lawrence-79; Delaware-88; Carbon-91
3311	Blast furnaces	Allegheny-1; Beaver-7; Cambria-13; Northampton-14; Dauphin-20
3312	Steel works and rolling mills	Allegheny-1; Beaver-4; Northampton-8; Cambria-11; Westmoreland-14; Washington-20
3313	Electrometallurgical products	Washington-17
3321	Gray-iron castings	Westmoreland-16; Allegheny-17
3322	Malleable iron castings	Northampton-18
3323	Steel castings	Allegheny-1; Cambria-6; Delaware-7; Westmoreland-10; Berks-15
3333	Primary zinc	Beaver-6; Carbon-8; Washington-9
3341	Secondary nonferrous metals	Philadelphia-2; Allegheny-13
3351	Copper rolling and drawing	Berks-16; Allegheny-17
3352	Aluminum rolling and drawing	Westmoreland-8; Schuylkill-11
3359	Rolling and drawing, n.e.c.	Bradford-6; Beaver-15; Carbon-18
3361	Nonferrous castings	Montgomery-7; Allegheny-8; Philadelphia-11
3391	Iron and steel forgings	Allegheny-4; Philadelphia-12
3392	Wire drawing	Luzerne-20
3393	Welded and heavy riveted pipe	Allegheny-1; Beaver-2; Montgomery-7; Mercer-8; Schuylkill-17
3399	Primary metal industries, n.e.c.	Beaver-5; Allegheny-8; Erie-15; Philadelphia-18
34	Fabricated metal products	Philadelphia-5; Allegheny-7; Montgomery-29; Beaver-36; Westmoreland-53; Erie-70; Lancaster-71; York-74; Lehigh-84; Chester-85; Delaware-88; Berks-90
3411	Tin cans and other tinware	Philadelphia-3; Allegheny-8
3423	Hand tools, n.e.c.	Philadelphia-11; Lehigh-16
3424	Files	Philadelphia-3
3425	Hand saws and saw blades	Philadelphia-2; Allegheny-7; York-17
3429	Hardware, n.e.c.	Philadelphia-17; Lancaster-20
3431	Plumbing fixtures and fittings	Fayette-20
3439	Heating and cooking equipment, n.e.c.	Philadelphia-10; Berks-16; Montgomery-17
3441	Structural and ornamental work	Allegheny-1; Beaver-3; Montgomery-9; Philadelphia-12; Lehigh-16
3442	Metal doors, sash and trim	Philadelphia-5; Schuylkill-13
3443	Boiler shop products	Allegheny-6; Chester-11; Erie-15; Montgomery-19
3444	Sheet metal work	Allegheny-1; Beaver-8; Erie-12
3461	Vitreous-enameled products	Philadelphia-3; Westmoreland-15
3463	Metal stampings	Allegheny-3; Philadelphia-7
3466	Galvanizing	Philadelphia-13
3468	Plating and polishing	Philadelphia-3
3471	Lighting fixtures	York-7; Delaware-13; Allegheny-18
3489	Fabricated wire products, n.e.c.	Philadelphia-16; Venango-18
3491	Metal barrels, drums, and pails	Westmoreland-3; Allegheny-4; Lawrence-10
3493	Steel springs	Allegheny-5; Montgomery-6; Philadelphia-20
3494	Bolts, nuts, washers, and rivets	Philadelphia-12
3495	Screw machine products	Delaware-1
3496	Collapsible tubes	Westmoreland-4; Philadelphia-12
3497	Metal foil	Philadelphia-6; Luzerne-18; Elk-20
3499	Fabricated metal products, n.e.c.	
35	Machinery (except electrical)	Philadelphia-9; Allegheny-21; York-44; Delaware-48; Erie-50; Berks-60; Montgomery-64; Westmoreland-71; Venango-80; Lancaster-81; Franklin-85; Lawrence-97
3511	Steam engines and turbines	Delaware-1; Westmoreland-5; York-6; Erie-13
3519	Internal combustion engines	Mercer-6
3521	Tractors	York-14
3522	Farm machinery, except tractors	Lancaster-11
3531	Construction and mining machinery	Erie-10
3532	Oil field machinery and tools	Venango-7; Beaver-19
3541	Machine tools	Franklin-13
3542	Metalworking machinery	Allegheny-2; Lawrence-5
3544	Special dies and tools	Allegheny-9; Philadelphia-11
3545	Metalworking machinery attachments	Franklin-13; Allegheny-15; Westmoreland-16; Dauphin-18
3551	Food products machinery	York-7
3552	Textile machinery	Berks-2; Philadelphia-3; Montgomery-9
3553	Woodworking machinery	Lancaster-7

Code	Industry	County and rank
35	(continued)	
3554	Paper-industries machinery	Philadelphia-7; Chester-15
3555	Printing-trades machinery	Philadelphia-8; Allegheny-11
3559	Special industry machinery, n.e.c.	Philadelphia-9; Warren-11; Lycoming-13
3561	Pumps and compressors	Venango-12; Allegheny-19
3562	Elevators and escalators	Montgomery-5; Philadelphia-13
3563	Conveyors	Montgomery-8; Indiana-15; Allegheny-16; Lawrence-18
3565	Industrial trucks and tractors	Philadelphia-1; Washington-17
3566	Power transmission equipment	Philadelphia-6; Lawrence-10
3567	Industrial furnaces and ovens	Crawford-2; Allegheny-4; Philadelphia-6
3569	General industrial machinery, n.e.c.	Philadelphia-6; Erie-11; Monroe-19
3571	Computing and related machines	Philadelphia-12
3581	Domestic laundry equipment	Erie-14
3585	Refrigeration machinery	Erie-4
3586	Measuring and dispensing pumps	Erie-10; Montgomery-12
3589	Service and household machines, n.e.c.	Philadelphia-5; Allegheny-6; Delaware-19
3591	Valves and fittings, except plumbing	McKean-6; Philadelphia-13; Westmoreland-14; Erie-18; Allegheny-19
3592	Fabricated pipe and fittings	Allegheny-1; Beaver-10; Philadelphia-11; Mercer-15
3593	Ball and roller bearings	Philadelphia-19
3594	Industrial patterns and molds	Philadelphia-7; Erie-17; Allegheny-19
3599	Machine shops	Philadelphia-4
36	Electrical machinery, equipment, and supplies	
3611	Wiring devices and supplies	Philadelphia-4; Allegheny-7; Mercer-29; Lancaster-44; Lehigh-45; Montgomery-49; Elk-50; Washington-67; Erie-72; Beaver-77; Westmoreland-87; Lackawanna-88;
3612	Carbon and graphite products	Lycoming-90; Berks-97
3613	Electrical measuring instruments	Allegheny-7; Beaver-10; Montgomery-12
3614	Motors and generators	Elk-2; Jefferson-9
3615	Transformers	Philadelphia-13; Lehigh-17
3616	Electrical control apparatus	Allegheny-4
3617	Electrical welding apparatus	Mercer-2; Allegheny-5; Washington-7
3621	Electrical appliances	Philadelphia-2; Allegheny-5; Beaver-11; Westmoreland-18
3631	Insulated wire and cable	York-5; Delaware-13; Philadelphia-19
3641	Engine electrical equipment	Allegheny-5; Lancaster-18; Philadelphia-19
3651	Electric lamps	Warren-15
3661	Radio and related products	Susquehanna-17; Northampton-19
3662	Electronic tubes	Lycoming-6
3663	Phonograph records	Philadelphia-4
3669	Communications equipment, n.e.c.	Lancaster-6; Lehigh-7; Montgomery-8; Carbon-19; Cameron-20
3691	Storage batteries	Lackawanna-4
3692	Primary batteries	Allegheny-1
		Philadelphia-1; Berks-6; Montgomery-20
		Lycoming-11
37	Transportation equipment	
3713	Truck and bus bodies	Delaware-25; Allegheny-31; Philadelphia-38; Erie-58; Lehigh-77; Berks-84; Lycoming-95;
3715	Truck trailers	Bucks-96
3721	Aircraft	Berks-10; York-17; Allegheny-18
3722	Aircraft engines	Philadelphia-13
3729	Aircraft equipment, n.e.c.	Delaware-18
3731	Ship building and repairing	Delaware-13; Philadelphia-16; Lycoming-17
3741	Locomotive and parts	Bucks-5
3742	Railroad and street cars	Delaware-17
3799	Transportation equipment, n.e.c.	Erie-2; Delaware-3
		Philadelphia-1; Allegheny-3; Butler-9; Cambria-10; Mercer-14
		Dauphin-2
38	Instruments and related products	
3811	Scientific instruments	Philadelphia-7; Lancaster-26; Allegheny-28; Bucks-32; Erie-38; Lackawanna-44;
3821	Mechanical measuring instruments	Montgomery-45; Westmoreland-48; Berks-53; Clearfield-57; York-59; Delaware-98
3831	Optical instruments and lenses	Lackawanna-11; Philadelphia-17
3841	Surgical and medical instruments	Philadelphia-1; Bucks-13; Westmoreland-19
3842	Surgical appliances and supplies	Allegheny-16
3843	Dental equipment and supplies	Philadelphia-12
3851	Ophthalmic goods	Allegheny-3; Erie-5; Philadelphia-11
3871	Watches and clocks	Philadelphia-2; York-5
		Berks-7
		Lancaster-4



Code	Industry	County and rank
39	Miscellaneous manufactures	Philadelphia-12; Allegheny-22; Montgomery-33; Erie-34; Crawford-35; York-38; Lackawanna-43; Indiana-59; Lancaster-77; Luzerne-78; Berks-79; Northampton-89
3911	Jewelry	Philadelphia-15
3931	Pianos	Delaware-7
3932	Organs	Lehigh-7
3941	Games and toys, n.e.c.	Erie-7; Lancaster-12; Allegheny-19; Montgomery-20
3942	Dolls	Philadelphia-10; Northampton-12
3943	Children's vehicles	Philadelphia-6
3949	Sporting and athletic goods	Northampton-7; Luzerne-10
3952	Lead pencils and crayons	Allegheny-2; Philadelphia-4
3953	Hand stamps and stencils	Philadelphia-6
3954	Artists' materials	Allegheny-8
3955	Carbon paper and inked ribbons	Philadelphia-5; Bradford-7
3962	Artificial flowers	Philadelphia-16
3963	Buttons	Crawford-3
3964	Needles, pins, and fasteners	Montgomery-6; Lackawanna-7
3971	Plastics products	Philadelphia-12
3981	Brooms and brushes	Allegheny-1; Beaver-2; Lancaster-7
3982	Cork products	Philadelphia-7
3984	Candles	Philadelphia-18
3986	Jewelry and instrument cases	Philadelphia-3; Lackawanna-11
3987	Lamp shades	Berks-3; Allegheny-9; York-10; Philadelphia-12; Lackawanna-14
3988	Morticians goods	Lycoming-4
3991	Beauty and barber shop equipment	Philadelphia-7; Allegheny-17
3993	Signs and advertising displays	Philadelphia-3
3994	Hairwork	Lancaster-2; Philadelphia-4
3995	Umbrellas, parasols, and canes	Philadelphia-6; Monroe-9; McKean-13
3999	Miscellaneous products, n.e.c.	

Code	Industry	Leading counties by rank order	Number of employees (total for the industry and for the leading counties)					Percent of employment in leading counties	
			Total	1	2	3	4		5
2011	Meat packing and custom slaughtering	02, 51, 25, 36, 63	10, 104	2, 598	2, 722	352	246	207	60
2013	Prepared meat products	51, 02, 40, 38, 35	3, 090	2, 140	255	174	129	90	90
2015	Poultry and small game packing and dressing	28, 36, 49, 07, 51	667	171	170	125	122	34	93
2021	Creamery butter	02, 53, 59, 17, 30	435	347	24	21	21	16	98
2022	Natural cheese	36, 06, 48, 35, 02	166	77	37	18	11	9	91
2023	Condensed and evaporated milk	20, 59, 67, 50, 37	297	89	84	50	30	26	94
2024	Ice cream and ices	51, 02, 36, 40, 22	4, 565	2, 034	625	300	242	161	74
2025	Special dairy products	17, 02, 08, 48, 51	240	128	76	31	3	2	100
2027	Fluid milk and cream	02, 51, 39, 67, 46	1, 310	2, 180	942	631	578	554	43
2032	Cured fish	51	70	70	-	-	-	-	100
2033	Canned fruits and vegetables	02, 01, 67, 15, 49	9, 913	2, 098	1, 564	1, 177	1, 159	931	70
2034	Dried and dehydrated fruits and vegetables	39, 36	83	53	30	-	-	-	100
2035	Pickled fruits and vegetables	51, 02, 20, 65, 15	902	262	235	182	80	54	90
2036	Fresh or frozen fish	09, 51	105	87	18	-	-	-	100
2037	Frozen fruits and vegetables	38, 67, 25, 51, 36	1, 318	378	261	229	153	112	86
2041	Flour and other grain products	22, 36, 48, 67, 21	347	62	36	36	24	22	52
2042	Prepared animal feeds	67, 36, 21, 51, 48	2, 444	386	278	232	160	146	49
2043	Cereal preparations	40, 23, 26, 48	231	102	63	58	8	-	100
2045	Blended and prepared flour	51	21	21	-	-	-	-	100
2051	Bread and other bakery products	51, 02, 46, 40, 35	27, 859	9, 917	5, 382	1, 226	1, 173	775	66
2052	Biscuits and crackers	51, 02, 15, 67	3, 255	2, 217	690	258	90	-	100
2053	Potato chips	19, 67, 36, 56, 07	1, 884	930	351	152	70	65	83
2054	Pretzels	06, 51, 67, 36, 46	1, 845	655	297	251	235	147	85
2062	Cane sugar refining	51	2, 312	2, 312	-	-	-	-	100
2071	Candy and other confectionery products	51, 06, 02, 48, 22	8, 847	4, 646	1, 121	1, 062	497	388	87
2072	Chocolate and cocoa products	22, 36, 51, 04, 39	4, 484	3, 348	572	530	20	11	99
2073	Chewing gum	51, 02, 23	559	277	166	116	-	-	100
2081	Bottled soft drinks and carbonated waters	51, 02, 40, 39, 22	5, 569	1, 640	1, 027	229	216	201	95
2082	Malt liquors	02, 51, 40, 54, 39	5, 917	1, 940	1, 439	696	318	302	79
2083	Malt	40	8	8	-	-	-	-	100
2084	Wines and brandy	51	53	53	-	-	-	-	100
2085	Distilled liquors, except brandy	51, 03, 38	2, 733	1, 441	1, 256	36	-	-	100
2091	Leavening compounds	02	8	8	-	-	-	-	100
2092	Shortening and cooking oils	51, 02, 35	163	90	70	3	-	-	100
2094	Corn products	23, 51	29	22	7	-	-	-	100
2095	Flavorings	51, 02, 39, 23, 36	535	446	66	11	6	4	99
2097	Manufactured ice	51, 31, 02, 06, 09	529	104	48	38	38	33	49
2098	Macaroni and spaghetti	02, 46, 22, 26, 51	463	139	120	67	62	47	94
2099	Food preparations, n.e.c.	51, 02, 38, 06, 46	1, 839	567	365	211	149	132	77
2111	Cigarettes	51	170	170	-	-	-	-	100
2121	Cigars	51, 40, 67, 35, 39	13, 700	4, 151	3, 736	1, 998	1, 323	572	86



Code	Industry	Leading counties by rank order	Number of employees (total for the industry and for the leading counties)					Percent of employment in leading counties
			Total	1	2	3	4	5
2131	Chewing and smoking tobacco	67, 36, 06, 21, 25	85	45	23	8	8	100
2141	Tobacco drying and restemming	54, 36, 67, 40, 02	458	211	133	78	35	100
2211	Scouring and combing plants	51, 45	706	696	10	-	-	100
2212	Yarn mills, wool, except carpet	51, 23, 46, 09, 06	1,992	827	482	211	177	93
2213	Woolen and worsted fabric	51, 23, 18, 65, 49	3,556	1,914	784	369	193	95
2216	Dyeing and finishing woolen and worsted goods	51, 36, 39	818	705	105	8	-	100
2222	Thrown yarn	35, 40, 55, 19, 60	3,665	1,452	746	367	242	82
2223	Thread mills	46, 45, 51	323	207	79	37	-	100
2224	Yarn mills, cotton system	51, 67, 39, 23, 40	2,698	937	727	307	257	91
2233	Cotton broad woven fabrics	51, 36, 40, 39, 35	1,573	704	216	199	194	88
2234	Rayon and related broad-woven fabrics	39, 35, 40, 51, 36	9,321	1,572	1,200	942	815	57
2241	Narrow fabric mills	51, 41, 67, 35, 46	4,516	1,588	905	495	281	78
2251	Full fashioned hosiery	06, 46, 09, 51, 48	10,814	5,317	971	843	697	77
2252	Seamless hosiery	06, 51, 46, 67, 36	5,001	2,639	918	355	314	88
2253	Knit outerwear mills	51, 06, 46, 39, 07	15,252	6,906	2,231	1,226	921	80
2254	Knit underwear mills	06, 54, 36, 08, 46	7,492	1,514	1,090	839	748	65
2255	Knit glove and mitten mills	09	54	54	-	-	-	100
2256	Knit fabric mills	51, 48, 40, 39, 06	3,037	618	462	425	406	74
2259	Knitting mills, n. e. c.	46, 51	143	84	59	-	-	100
2261	Finishing textiles, except wool	51, 23, 09, 39, 38	3,761	1,768	659	302	232	83
2271	Wool carpets, rugs, and carpet yarn	51, 19, 21, 15, 46	7,384	4,067	1,844	923	329	99
2273	Carpets and rugs, n. e. c.	46, 23, 35, 06, 13	1,860	723	579	191	144	91
2274	Hard surfaced floor covering	36, 23, 39	5,020	3,886	898	236	-	100
2281	Fur felt hats and hat bodies	51, 06, 49, 39, 23	2,668	1,966	292	269	81	99
2282	Wool felt hats and hat bodies	36	806	806	-	-	-	100
2283	Straw hats	49, 51	31	17	14	-	-	100
2291	Felt goods, n. e. c.	51, 46, 23	270	215	47	8	-	100
2292	Lace goods	51, 35, 13	1,707	1,138	537	32	-	100
2293	Paddings and upholstery filling	51, 46	209	187	22	-	-	100
2294	Processed textile waste and recovered fabrics	51, 23, 09	212	178	22	12	-	100
2295	Coated fabrics	51	2	2	-	-	-	100
2297	Jute	51, 39, 67, 48, 02	1,292	446	389	351	91	100
2298	Cordage and twine	67, 06, 48, 51	551	395	86	69	1	100
2299	Textile goods, n. e. c.	40, 35, 51, 09	1,065	802	142	113	8	100
2311	Men's and boys' suits and coats	51, 28, 46, 39, 31	23,510	15,191	1,595	1,280	743	83
2312	Suit and coat findings	51	487	487	-	-	-	100
2321	Men's dress and sport shirts and nightwear	54, 40, 67, 41, 49	20,644	3,037	1,728	1,583	1,261	43
2322	Men's and boys' underwear	39, 54, 06, 51, 15	1,284	593	406	261	16	100
2323	Men's and boys' neckwear	48, 51, 09, 25	925	540	345	20	20	100
2325	Cloth hats and caps	51, 35, 06, 02, 40	366	266	90	6	3	100
2326	Hat and cap materials	51, 49	72	44	28	-	-	100

Code	Industry	Leading counties by rank order	Number of employees (total for the industry and for the leading counties)					Percent of employment in leading counties	
			Total	1	2	3	4		5
2327	Separate dress and sport trousers	51, 35, 09, 48, 40	10, 524	2, 346	1, 881	1, 339	1, 220	1, 024	74
2328	Work shirts	46, 21, 06, 51, 67	425	197	59	56	54	34	94
2329	Men's and boys' clothing, n.e.c.	51, 40, 54, 23, 35	9, 750	4, 595	1, 396	567	561	495	78
2331	Women's and misses' blouses	48, 51, 40, 54, 13	11, 806	3, 315	1, 353	1, 088	1, 008	848	64
2333	Women's and misses' unit priced dresses	40, 35, 51, 54, 49	17, 798	5, 005	2, 726	2, 259	2, 246	1, 207	76
2334	Women's and misses' dozen priced dresses	51, 40, 35, 54, 49	11, 278	2, 182	2, 114	1, 254	855	696	63
2337	Women's and misses' suits, coats, and skirts	51, 67, 40, 35, 09	3, 403	1, 607	418	385	241	170	83
2338	Women's neckwear and scarfs	48, 02	35	27	8	-	-	-	100
2339	Women's, misses', and juniors' outerwear, n.e.c.	51, 39, 54, 19, 48	2, 298	675	644	344	152	130	85
2341	Women's and children's underwear and nightwear	36, 39, 35, 06, 49	14, 587	1, 732	1, 707	983	982	955	44
2342	Corsets and allied garments	40, 11, 39, 48, 35	3, 451	1, 090	800	334	317	291	82
2351	Millinery	51, 40, 49	797	750	42	5	-	-	100
2361	Dresses, blouses, and skirts; girls, children's	51, 40, 36, 35, 46	11, 477	2, 436	1, 416	1, 295	1, 196	969	64
2363	Children's and infants' coats	51, 36, 35, 40, 65	2, 629	937	570	463	226	118	88
2369	Girls', children's, and infants' outerwear, n.e.c.	51, 39, 46, 09, 40	1, 305	409	178	165	135	133	78
2371	Fur goods	51, 09, 39, 02, 23	126	70	19	12	11	5	93
2381	Dress and semi-dress gloves and mittens	48, 35, 67, 39, 59	667	344	90	88	73	72	100
2382	Work gloves and mittens	46, 33, 48, 32, 65	343	111	93	48	47	21	93
2383	Suspenders, garters, and related products	51	17	17	-	-	-	-	100
2384	Robes and dressing gowns	54, 07, 39, 28, 51	1, 090	271	170	117	100	99	69
2385	Raincoats and other waterproof outer garments	39, 51, 23, 19	551	348	116	73	14	-	100
2386	Leather and sheep lined clothing	22	185	185	-	-	-	-	100
2387	Belts	23, 51, 40, 02, 22	1, 135	354	344	302	54	42	96
2388	Handkerchiefs	48, 38	263	160	103	-	-	-	100
2389	Apparel, n.e.c.	46, 51, 63, 52, 67	490	239	160	64	16	11	100
2391	Curtains and draperies	51, 02, 48, 67, 45	1, 435	645	335	204	102	69	94
2392	Housefurnishings, n.e.c.	48, 51, 02, 25, 58	1, 849	588	466	227	159	122	84
2393	Textile bags	48, 40, 51, 36, 02	1, 126	327	310	296	92	56	96
2394	Canvas products	51, 02, 67, 48, 04	956	588	187	34	15	14	88
2395	Tucking, pleating, and hemstitching	51, 06	90	73	17	-	-	-	100
2396	Trimings, stamped art goods and art needlework								
2397	Schiffli-machine embroideries	06, 51, 41, 38, 36	1, 513	588	436	316	115	31	98
2398	Embroideries, except schiffli-machine	51, 40, 35, 19	224	123	55	30	16	-	100
2399	Fabricated textile products, n.e.c.	51, 02, 48	255	243	9	3	-	-	100
2421	Sawmills and planing mills	51, 09, 46, 06, 15	1, 466	605	302	190	118	100	90
2422	Veneer mills	26, 56, 41, 05, 17	5, 270	368	362	291	264	227	29
2424	Cooperage stocks mills	67, 41, 33	50	27	13	10	-	-	100
2431	Millwork plants	30, 03, 23	67	26	24	17	-	-	100
2432	Plywood plants	23, 46, 02, 41, 51	4, 826	429	397	355	331	324	38
2433	Prefabricated wood products	49	143	143	-	-	-	-	100
2441	Fruit and vegetable baskets	02, 39, 51, 63, 28	462	151	120	108	36	28	96
2442	Rattan and willow ware, n.e.c.	25	12	12	-	-	-	-	100
		51, 40, 02	37	30	4	3	-	-	100

Code	Industry	Leading counties by rank order	Number of employees (total for the industry and for the leading counties)					Percent of employment in leading counties
			Total	1	2	3	4	
2443	Cigar boxes	67, 09, 06, 51, 01	473	321	48	45	28	16
2444	Wooden boxes	51, 46, 02, 25, 08	902	327	133	85	68	52
2445	Cooperage	02, 51, 04, 37, 67	74	26	22	11	6	5
2491	Wood preserving	09, 26, 65	139	89	30	20	-	-
2492	Lasts and related products	51	12	12	-	-	-	-
2493	Mirror and picture frames	24, 51, 54, 02, 09	87	45	31	4	3	3
2499	Wood products, n.e.c.	51, 42, 05, 18, 41	2, 149	501	330	154	127	118
2511	Wood house-furniture, except upholstered	49, 25, 60, 01, 48	6, 609	816	531	509	479	381
2512	Wood household furniture, upholstered	41, 51, 40, 46, 02	3, 003	686	627	423	256	198
2514	Metal house furniture	51, 42, 46, 36, 18	1, 999	1, 336	380	138	62	46
2515	Mattresses and bedsprings	51, 02, 23, 06, 22	1, 298	416	399	102	67	66
2521	Wood office furniture	41, 51, 39, 36	467	382	54	29	2	-
2522	Metal office furniture	67, 25, 51, 46, 02	2, 568	849	750	358	274	231
2531	Public-building furniture	23, 51, 06, 67, 55	712	226	225	73	41	35
2532	Professional furniture	11, 25, 51, 02	173	97	67	6	3	-
2541	Partitions and fixtures	51, 67, 02, 62, 42	2, 590	675	378	211	183	170
2561	Window and door screens	25, 51, 67, 23, 63	443	167	122	70	37	35
2562	Window shades	51, 02, 39, 54	198	119	55	22	2	-
2563	Venetian blinds	41, 02, 51, 67, 46	722	281	204	115	45	40
2591	Restaurant furniture	51, 02	33	25	8	-	-	-
2599	Furniture and fixtures, n.e.c.	45, 06, 56	186	88	73	25	-	-
2612	Paper and board mills	25, 67, 18, 07, 24	9, 536	2, 233	1, 588	1, 265	1, 193	1, 075
2613	Building paper and board mills	46, 49, 67	291	148	89	54	-	-
2641	Paper coating and glazing	09, 07, 51, 06, 42	2, 074	623	529	457	250	78
2651	Envelopes	51, 02, 46	636	564	67	5	-	-
2661	Paper bags	51, 15, 02, 09, 42	1, 588	550	317	202	201	155
2671	Paperboard boxes	51, 02, 06, 46, 38	14, 115	6, 063	1, 735	865	831	405
2674	Fiber cans, tubes, drums, etc.	67, 51, 23, 15, 43	702	273	247	69	67	33
2691	Die-cut paper and board	51, 23, 40, 37, 21	282	172	86	8	7	5
2693	Wallpaper	67, 09, 36, 23	647	383	206	43	15	-
2699	Converted paper products, n.e.c.	23, 51, 48, 46, 02	10, 694	2, 663	1, 833	1, 330	933	782
2711	Newspapers	51, 02, 40, 35, 46	22, 445	6, 554	3, 953	926	902	690
2721	Periodicals	51, 23, 45, 36, 39	6, 691	4, 585	1, 036	508	222	154
2731	Books; publishing, publishing and printing	51, 35, 48, 67, 23	3, 110	952	662	657	496	234
2732	Book printing	51, 36, 22, 31, 38	3, 200	2, 658	207	158	55	39
2741	Miscellaneous printing	22, 51, 02, 67, 46	562	306	106	57	41	16
2751	Commercial printing	51, 02, 35, 22, 15	9, 837	3, 445	1, 230	1, 044	415	313
2761	Lithography	51, 02, 65, 23, 36	5, 069	2, 420	1, 379	250	230	196
2771	Greeting cards	51, 06, 02, 67, 39	443	343	76	11	9	4
2781	Bookbinding	51, 02, 67, 06, 11	1, 213	929	134	32	31	22
2782	Blankbook making and paper ruling	51, 07, 41, 31, 02	605	270	184	53	40	23



Code	Industry	Leading counties by rank order					Number of employees (total for the industry and for the leading counties)					Percent of employment in leading counties
		by rank order					Total					
		1	2	3	4	5						
2783	Library and loose-leaf binders and mfg.	67, 23, 51, 63, 02	615	212	191	166	27	19	100			
2789	Miscellaneous bookbinding	67	18	18	-	-	-	-	100			
2791	Typesetting	51, 67, 02, 36, 46	1, 713	999	373	188	89	28	98			
2792	Engraving and plate printing	51, 02, 43, 23, 46	847	715	54	46	27	3	99			
2793	Photoengraving	51, 02, 46, 11, 48	1, 516	992	196	46	41	41	87			
2794	Electrotyping and stereotyping	51, 02, 67, 25, 40	502	418	53	15	7	4	99			
2811	Sulfuric acid	26, 37	223	169	54	-	-	-	100			
2812	Alkalies and chlorine	26	6	6	-	-	-	-	100			
2819	Inorganic chemicals, n.e.c.	10, 23, 51, 09, 02	1, 767	534	460	155	144	140	81			
2821	Cyclic (coal tar) crudes	46, 48	64	49	15	-	-	-	100			
2822	Intermediates, dyes, color bases and toners	06, 24, 67, 18, 23	372	151	139	33	22	19	98			
2823	Plastic materials	04, 02, 51, 23, 15	3, 695	1, 231	1, 207	808	256	132	98			
2825	Rayon, acetate, noncellulosic synthetic fibers	44, 20	3, 727	2, 429	1, 298	-	-	-	100			
2826	Explosives	54, 40, 65, 37, 26	2, 145	1, 088	284	216	203	142	90			
2829	Organic chemicals	51, 09, 39, 32, 10	8, 564	4, 425	2, 406	621	461	237	95			
2831	Biological products	36, 45, 48, 51	473	312	86	49	26	-	100			
2833	Medicinal chemicals	49	683	683	-	-	-	-	100			
2834	Pharmaceutical products	51, 46, 15, 38, 15	7, 423	5, 336	744	484	280	172	95			
2841	Soap and glycerin	51, 09, 02, 06, 36	996	665	209	96	12	10	99			
2842	Cleaning and polishing preparations	51, 02, 46, 04, 23	854	414	181	65	51	45	89			
2843	Sulfonated oils and assistants	10, 51, 46	921	431	420	70	-	-	100			
2851	Paints, varnishes, lacquers, japans and enamels	51, 02, 06, 15, 04	4, 931	2, 287	1, 585	561	181	66	95			
2852	Inorganic color pigment	48, 51, 63, 04, 02	1, 234	525	331	172	66	63	94			
2853	Whiting and fillers	51, 35, 67, 49, 62	269	129	79	27	25	4	98			
2861	Hardwood distillation	42, 33, 59, 40	145	75	45	24	1	-	100			
2865	Natural tanning and dyeing materials	18, 42, 53	391	307	60	24	-	-	100			
2871	Fertilizers	51, 46, 67, 39, 36	1, 252	494	357	129	72	33	87			
2872	Fertilizers (mixing only)	36, 17, 15, 65	25	12	10	2	1	-	100			
2884	Vegetable oil mills, n.e.c.	51, 02	17	12	5	-	-	-	100			
2886	Grease and tallow	51, 02, 40, 06, 36	906	451	135	97	30	24	81			
2887	Fatty acids	51	170	170	-	-	-	-	100			
2889	Animal oils, n.e.c.	02	34	34	-	-	-	-	100			
2891	Printing ink	51, 02	659	654	-	-	-	-	100			
2892	Essential oils	51	2	2	-	-	-	-	100			
2893	Toilet preparations	51, 36, 02, 06, 64	531	242	131	125	15	6	98			
2894	Glue and gelatin	06, 51, 46, 09	538	234	221	69	14	-	100			
2895	Carbon black	51, 48, 15	84	53	20	12	-	-	100			
2896	Compressed and liquified gases	02, 03, 23, 51, 46	1, 217	331	208	152	147	95	77			
2897	Insecticides and fungicides	38, 46, 51, 02, 07	190	76	56	44	8	6	100			
2899	Chemical products, n.e.c.	51, 02, 46, 25, 09	1, 494	475	329	297	137	99	89			

Code	Industry	Leading counties by rank order	Number of employees (total for the industry and for the leading counties)					Percent of employment in leading counties	
			Total						
			1	2	3	4	5		
2911	Petroleum refining	23, 51, 61, 10, 62	13, 880	5, 965	5, 818	1, 029	290	282	96
2931	Beehive coke ovens	26, 65, 32	865	490	296	79	-	-	100
2932	Byproduct coke ovens	02, 51, 32	7, 193	6, 762	413	18	-	-	100
2951	Paving mixtures and blocks	54, 02, 65, 46, 36	635	218	60	60	46	32	66
2952	Roofing felts and coatings	51, 25, 67, 02, 39	1, 126	359	325	313	124	5	100
2992	Lubricants, n.e.c.	51, 42, 02, 61, 62	1, 666	810	448	267	76	48	99
2999	Products of petroleum and coal, n.e.c.	54, 22	57	37	20	-	-	-	100
3011	Tires and inner tubes	46, 21, 32, 20, 24	6, 433	5, 510	456	301	163	3	100
3021	Rubber footwear	01, 28, 06, 45, 40	831	517	121	102	66	25	100
3031	Reclaimed rubber	63	4	4	-	-	-	-	100
3099	Rubber industries, n.e.c.	51, 25, 09, 40, 15	6, 411	2, 101	1, 483	578	559	380	80
3111	Leather tanning and finishing	51, 59, 41, 17, 28	5, 085	2, 018	1, 312	382	265	261	83
3121	Industrial leather belting	51, 23, 36	164	146	15	3	-	-	100
3131	Footwear cut stock	41, 67, 51, 36, 35	1, 138	323	283	191	131	92	90
3141	Footwear, except rubber	36, 40, 22, 51, 67	21, 235	2, 862	2, 726	1, 958	1, 926	1, 683	53
3142	House slippers	40, 64, 58, 23, 41	787	368	132	128	80	46	96
3151	Leather dress gloves	53	53	53	-	-	-	-	100
3152	Leather work gloves	02	7	7	-	-	-	-	100
3161	Luggage	51, 37, 02, 42, 23	1, 134	706	311	46	30	14	98
3171	Handbags and purses	51, 35, 48, 13, 46	1, 492	421	265	254	139	138	82
3172	Small leather goods	51, 06, 32, 03, 08	537	249	174	85	19	10	100
3192	Saddlery, harness, and whips	09, 51, 08, 54	102	58	22	17	5	-	100
3199	Leather goods, n.e.c.	51, 41, 02, 67	202	127	47	15	13	-	100
3211	Flat glass	03, 65, 10, 02, 38	5, 613	3, 109	1, 584	217	185	175	94
3221	Glass containers	63, 26, 33, 16, 02	9, 139	3, 093	1, 485	1, 347	1, 069	601	83
3229	Pressed and blown glassware, n.e.c.	65, 63, 02, 31, 42	7, 085	2, 003	1, 535	1, 097	935	533	86
3231	Products of purchased glass	02, 51, 65, 09, 04	5, 669	4, 167	605	356	117	102	94
3241	Cement, hydraulic	48, 39, 37, 02, 06	7, 421	3, 577	1, 477	623	458	372	88
3251	Brick and hollow tile	04, 37, 33, 06, 03	3, 327	580	265	253	218	176	45
3253	Floor and wall tile	46, 09, 01	1, 340	712	469	159	-	-	100
3254	Sewer pipe	33, 46, 11, 24, 17	963	209	175	159	154	152	88
3255	Clay refractories	17, 14, 04, 03, 10	4, 540	1, 483	482	323	309	268	63
3259	Structural clay products, n.e.c.	03, 04, 18, 23, 01	376	144	136	46	29	9	97
3261	Vitreous plumbing fixtures	03, 37	1, 154	741	413	-	-	-	100
3262	Vitreous china food utensils	37, 63, 33, 04, 62	2, 725	1, 453	468	430	354	20	100
3264	Porcelain electrical supplies	65, 10	733	448	285	-	-	-	100
3265	China decorating for the trade	09, 26, 17	31	17	12	2	-	-	100
3269	Pottery products, n.e.c.	67, 46, 16, 23, 51	454	165	72	68	44	41	86
3271	Concrete products	02, 46, 36, 37, 67	4, 261	527	418	290	273	212	40
3272	Gypsum products	51, 38	338	322	16	-	-	-	100
3274	Lime	14, 38, 67, 15, 22	1, 620	670	310	197	148	114	89

Code	Industry	Leading counties by rank order		Number of employees (total for the industry and for the leading counties)					Percent of employment in leading counties
		Total		1	2	3	4	5	
3275	Mineral wool	04, 48, 37, 43, 40	287	219	39	19	6	4	100
3281	Cut-stone and stone products	02, 51, 39, 15, 13	663	124	76	59	48	45	53
3291	Abrasive products	51, 15, 02, 10, 09	1, 662	1, 011	312	107	48	44	92
3292	Asbestos products	36, 46, 51, 24	2, 907	1, 320	1, 158	351	78	-	100
3293	Gaskets and asbestos insulation	46, 02, 51, 49, 67	1, 309	524	429	320	14	10	99
3295	Minerals, ground or treated	15, 02, 21, 39, 51	959	214	148	90	59	51	59
3297	Nonclay refractories	07, 46, 31, 51, 02	3, 601	735	658	599	367	335	75
3298	Statuary and art goods	51, 02, 67, 37, 35	288	129	71	42	34	12	100
3299	Non-metallic mineral products, n.e.c.	37	36	36	-	-	-	-	100
3311	Blast furnaces	02, 43, 25, 06, 23	5, 088	2, 801	1, 554	327	228	178	100
3312	Steel works and rolling mills	02, 04, 48, 11, 65	173, 835	54, 463	27, 198	21, 148	15, 851	8, 475	73
3313	Electrometallurgical products	63, 06	232	230	2	-	-	-	100
3321	Gray-iron foundries	65, 06, 02, 46, 51	9, 580	1, 429	1, 385	1, 362	1, 058	581	61
3322	Malleable-iron foundries	36, 25, 48, 20, 35	1, 974	651	512	457	318	20	99
3323	Steel foundries	02, 23, 65, 38, 06	13, 103	4, 597	2, 450	1, 363	1, 158	635	78
3331	Primary copper	51	36	36	-	-	-	-	100
3332	Primary lead	51	37	37	-	-	-	-	100
3333	Primary zinc	13, 04, 63, 09	4, 227	2, 486	1, 057	599	85	-	100
3334	Primary aluminum	48, 36	187	180	7	-	-	-	100
3339	Primary nonferrous metals	51, 02, 46	115	85	25	5	-	-	100
3341	Secondary nonferrous metals	51, 15, 02, 36, 23	1, 876	832	424	279	165	76	95
3351	Copper rolling and drawing	14, 06, 02, 25	3, 276	1, 383	1, 010	651	232	-	100
3352	Aluminum rolling and drawing	65, 54, 43, 13, 36	5, 184	2, 842	1, 644	278	252	125	99
3359	Nonferrous metal rolling, n.e.c.	46, 04, 63	1, 943	1, 276	525	142	-	-	100
3361	Nonferrous foundries	46, 51, 02, 25, 20	7, 341	2, 436	1, 020	934	917	421	78
3391	Iron and steel forgings	51, 02, 62, 20, 39	7, 470	1, 943	1, 910	939	621	416	78
3392	Wire drawing	41, 65, 02, 40, 23	3, 972	1, 340	906	850	313	301	93
3393	Welded and heavy-riveted pipe	02, 63, 04, 37, 43	22, 823	9, 989	3, 319	3, 016	2, 887	1, 469	91
3399	Primary metal industries, n.e.c.	65, 04, 25, 02, 63	8, 030	4, 263	1, 025	689	683	403	88
3411	Tin cans and other tinware	51, 02, 21, 36, 61	3, 838	2, 156	1, 024	239	215	141	98
3421	Cutlery	42, 06, 20, 02, 09	567	292	132	86	29	23	99
3422	Edge tools	02, 51, 41, 36, 21	127	43	35	33	10	6	100
3423	Hand tools, n.e.c.	51, 02, 36, 20, 23	1, 499	630	240	139	138	64	81
3424	Files	51, 23	487	484	3	-	-	-	100
3425	Hand saws and saw blades	51, 67, 02, 39	1, 673	1, 503	82	50	38	-	100
3429	Hardware, n.e.c.	51, 36, 02, 06, 04	3, 790	1, 353	736	679	249	169	84
3431	Metal plumbing fixtures	25, 04, 02, 26, 51	3, 528	1, 268	499	431	358	348	82
3432	Oil burners, domestic and industrial	02, 51, 09, 44, 36	833	583	115	101	20	9	99
3439	Heating and cooking apparatus, n.e.c.	51, 06, 46, 37, 25	6, 213	1, 422	930	897	628	376	68
3441	Structural and ornamental products	04, 02, 46, 51, 63	18, 716	5, 978	4, 144	2, 263	1, 691	782	79
3442	Metal doors, sash and trim	51, 54, 21, 65, 02	4, 465	1, 916	713	688	310	307	88



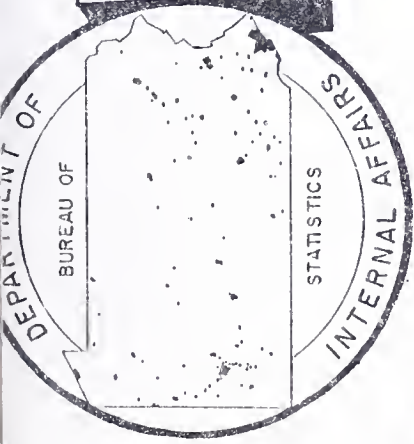
Code	Industry	Leading counties by rank order	Number of employees (total for the industry and for the leading counties)					Percent of employment in leading counties
			Total	1	2	3	4	5
3443	Boiler shop products	02, 22, 09, 62, 46	10, 560	1, 755	1, 537	935	921	670
3444	Sheet-metal work	51, 02, 46, 23, 25	5, 556	2, 641	1, 606	225	201	113
3461	Vitreous enameled products	02, 35, 25, 06	2, 262	1, 258	595	296	113	-
3463	Metal stampings	51, 65, 26, 36, 02	11, 006	3, 564	2, 407	923	908	671
3464	Powder metallurgy	37, 33	52	32	20	-	-	-
3465	Enameling and lacquering	51, 39, 02, 46, 23	443	19	101	56	19	4
3466	Galvanizing	02, 51, 43, 10	722	348	307	48	19	-
3467	Engraving on metal	19, 43, 45, 39	356	335	18	2	1	-
3468	Plating and polishing	51, 02, 25, 39, 48	1, 570	582	185	141	131	113
3471	Lighting fixtures	51, 65, 39, 06, 02	5, 836	3, 796	580	475	389	125
3481	Nails and spikes	02, 51	438	425	13	-	-	-
3489	Wirework, n.e.c.	67, 51, 40, 02, 41	6, 343	2, 768	833	744	658	313
3491	Metal barrels, drums, and pails	51, 61, 02, 36	647	426	122	71	28	-
3492	Safes and vaults	19	4	4	-	-	-	-
3493	Steel springs	25, 65, 02, 46, 51	2, 583	672	491	398	334	279
3494	Bolts, nuts, washers and rivets	46, 38, 02, 04, 51	9, 725	2, 680	2, 396	1, 880	785	622
3495	Screw machine products	51, 36, 02, 25, 46	1, 166	286	190	179	118	91
3496	Collapsible tubes	23, 04	578	501	77	-	-	-
3497	Metal foil	51	146	146	-	-	-	-
3499	Fabricated metal products, n.e.c.	11, 02, 51, 23, 48	4, 381	2, 381	592	357	228	170
3511	Steam engines and turbines	23, 65, 67, 25, 39	10, 431	6, 056	2, 665	1, 232	141	133
3519	Internal combustion engines	43, 25, 67, 51	2, 860	2, 331	286	239	4	-
3521	Tractors	67, 11	596	591	5	-	-	-
3522	Farm machinery	36, 44, 15, 45, 40	2, 893	1, 632	367	230	201	159
3531	Construction and mining machinery	25, 02, 61, 47, 51	9, 423	2, 033	2, 015	1, 458	794	557
3532	Oil field machinery and tools	61, 02, 04, 51, 10	3, 220	1, 201	633	504	354	258
3541	Machine tools	28, 51, 25, 46, 36	3, 191	2, 333	466	102	91	62
3542	Metalworking machinery, n.e.c.	02, 06, 08, 37, 20	10, 181	4, 453	1, 436	1, 364	1, 284	536
3544	Special dies and tools, die sets, jigs and fixtures	51, 02, 67, 46, 65	2, 913	1, 000	508	258	204	194
3545	Attachments and accessories for machine tools	65, 22, 25, 20, 02	2, 597	1, 247	505	325	191	103
3551	Food products machinery	67, 51, 02, 46, 23	1, 540	626	386	153	123	86
3552	Textile machinery	06, 51, 46, 35, 15	8, 195	3, 836	2, 979	971	133	70
3553	Woodworking machinery	36, 02, 67, 58, 41	723	430	109	62	52	41
3554	Paper industries machinery	15, 51, 46, 67	981	467	386	85	43	-
3555	Printing-trades machinery	51, 02, 48, 67, 36	1, 812	683	422	267	140	107
3559	Special industry machinery, n.e.c.	51, 41, 46, 64, 48	5, 574	1, 654	804	415	376	322
3561	Pumps and compressors	61, 02, 42, 15, 51	3, 863	1, 076	631	417	387	257
3562	Elevators and escalators	46, 51, 04, 06, 22	704	309	169	123	48	29
3563	Conveyors	46, 32, 37, 36, 06	3, 362	673	574	531	515	283
3564	Blowers and fans	25, 02, 36, 10, 22	729	379	147	94	67	39
3565	Industrial trucks and tractors	51, 04, 40, 15, 25	3, 570	3, 312	91	53	36	26

Code	Industry	Leading counties by rank order	Number of employees (total for the industry and for the leading counties)					Percent of employment in leading counties
			Total	1	2	3	4	
3566	Power-transmission equipment	51, 37, 02, 61, 24	6,966	2,658	1,549	754	644	88
3567	Industrial furnaces and ovens	46, 02, 40, 37, 51	1,693	547	436	395	201	97
3568	Mechanical stokers	40, 35	50	34	16	-	-	100
3569	General industrial machinery, n.e.c.	51, 39, 09, 45, 46	4,071	1,136	846	387	351	74
3571	Computing and related machines	51, 25, 46	1,265	1,160	100	5	-	100
3576	Scales and balances	51, 36, 46, 02	150	67	55	16	12	100
3579	Office and store machines, n.e.c.	51 -	16	16	-	-	-	100
3581	Domestic laundry equipment	25, 39	540	491	49	-	-	100
3582	Laundry and dry cleaning machinery	40, 36, 25, 51	545	518	16	10	1	100
3583	Sewing machines	06, 39, 51	203	173	21	9	-	100
3584	Vacuum cleaners	65, 02, 67	53	30	20	3	-	100
3585	Refrigeration machinery	67, 25, 28, 39, 51	8,636	3,980	1,207	738	580	82
3586	Measuring and dispensing pumps	46, 25, 02, 51	720	309	295	82	34	100
3589	Service and household machines, n.e.c.	51, 23, 25, 15, 02	474	286	91	86	10	100
3591	Valves and fittings	51, 65, 46, 42, 06	10,471	1,848	1,709	1,307	1,257	69
3592	Fabricated pipe and fittings	02, 51, 48, 46, 15	1,041	447	171	150	63	85
3593	Ball and roller bearings	51, 36, 21, 07, 46	5,311	3,884	578	327	268	98
3594	Industrial patterns and molds	02, 65, 25, 51, 06	1,299	267	209	209	102	85
3599	Machine shops	51, 02, 09, 46, 63	5,946	2,336	811	365	261	67
3611	Wiring devices and supplies	02, 04, 46, 22, 67	9,734	2,332	1,966	1,224	1,193	73
3612	Carbon and graphite products	24, 51, 02, 53, 36	1,455	1,298	64	60	26	100
3613	Electrical measuring instruments	51, 21, 35, 02, 09	4,047	3,471	200	129	117	99
3614	Motors and generators	25, 24, 02, 58, 35	6,918	3,685	933	684	639	92
3615	Transformers	43, 02, 63, 48, 51	13,952	8,036	3,208	1,556	701	98
3616	Electrical distribution and control apparatus	02, 51, 24, 04, 65	31,688	13,905	11,119	2,419	1,820	95
3617	Electrical welding apparatus	67, 51, 36	1,105	904	182	19	-	100
3619	Electrical industrial apparatus, n.e.c.	51, 23, 42, 02, 22	3,292	1,789	320	297	293	91
3621	Electrical appliances	02, 36, 39, 51, 25	4,488	1,262	1,014	825	426	87
3631	Insulated wire and cable	40, 51, 67, 06, 63	778	576	133	54	7	99
3641	Engine electrical equipment	48, 23, 01, 02, 15	1,036	359	250	156	136	96
3651	Electric lamps	41, 59, 24, 62, 35	2,352	981	718	326	281	100
3661	Radios and related products	51, 63, 17, 41, 09	18,907	11,223	1,380	1,091	776	80
3662	Electron tubes	36, 39, 46, 12, 33	20,317	3,953	3,071	2,731	2,012	75
3663	Phonograph records	35, 51, 39, 23	815	744	53	16	2	100
3664	Telephone and telegraph equipment	51, 15	116	108	8	-	-	100
3669	Communication equipment, n.e.c.	02, 65, 23, 51	4,094	4,069	21	2	2	100
3691	Storage batteries	51, 06, 46, 39, 35	3,019	1,712	808	250	172	99
3692	Primary batteries	41, 02	374	367	7	-	-	100
3693	X-ray and therapeutic apparatus	08, 46	113	111	2	-	-	100
3699	Electrical products, n.e.c.	25, 09, 63, 46	1,601	1,436	108	49	8	100

Code	Industry	Leading counties by rank order	Number of employees (total for the industry and for the leading counties)					Percent of employment in leading counties
			Total	1	2	3	4	5
3713	Truck and bus bodies	39, 37, 67, 06, 51	5,991	3,939	604	450	435	218
3715	Truck trailers	51, 06, 15, 25, 09	1,495	721	244	145	123	94
3716	Automobile trailers	16, 41, 46, 35, 51	283	99	74	44	35	90
3717	Motor vehicles and parts	51, 02, 06, 23, 46	18,383	6,134	5,034	2,582	2,098	95
3721	Aircraft	23, 18, 51, 04	6,647	4,885	1,653	59	50	94
3722	Aircraft engines	41, 22, 47, 46, 09	6,131	2,915	1,600	906	288	100
3729	Aircraft equipment, n.e.c.	09, 23, 25, 46, 11	4,175	1,921	569	500	378	96
3731	Ship building	23, 02, 51, 26	4,080	2,442	1,194	250	194	89
3732	Boat building	36, 25, 02, 23, 51	568	363	135	49	14	100
3741	Locomotives and parts	25, 23, 28, 33	8,920	5,376	3,492	28	24	99
3742	Railroad and street cars	02, 51, 19, 10, 43	15,353	5,160	4,563	2,307	1,234	100
3799	Transportation equipment, n.e.c.	51, 22, 36, 28, 15	704	330	181	97	61	93
3811	Scientific instruments	51, 02, 46, 28, 67	1,461	1,206	103	77	42	99
3821	Mechanical measuring instruments	51, 09, 65, 25, 46	9,792	4,074	2,553	1,497	731	94
3831	Optical instruments and lenses	02, 51, 46, 61, 40	336	208	67	37	13	99
3841	Surgical and medical instruments	51, 40, 46	331	224	104	3	-	100
3842	Surgical appliances and supplies	02, 25, 51, 10, 23	3,544	1,518	770	526	211	90
3843	Dental equipment and supplies	51, 67, 02, 36, 54	1,659	789	788	66	10	99
3851	Ophthalmic goods	06, 51, 20, 63, 25	1,125	966	81	51	17	99
3861	Photographic equipment and supplies	51, 02, 46, 45	586	368	185	19	14	100
3871	Watches and clocks	36, 02, 51	1,730	1,695	29	6	-	100
3872	Watchcases	51	15	15	-	-	-	100
3911	Jewelry	51, 02, 36	378	290	83	5	-	100
3912	Jewelers' findings	46, 51	17	14	3	-	-	100
3913	Lapidary work	02, 51	26	22	4	-	-	100
3914	Silverware and plated work	51, 02, 15	85	44	21	20	-	100
3931	Musical instruments and parts	23, 39, 25, 09, 48	900	329	227	103	77	89
3941	Games and toys	25, 02, 40, 36, 51	6,053	1,836	959	626	588	89
3942	Dolls	51, 42, 39	57	35	20	2	-	100
3943	Children's vehicles	51, 67, 50	348	265	55	28	-	100
3949	Sporting and athletic goods	51, 43, 17, 40, 02	2,013	935	220	165	150	79
3952	Pens and mechanical pencils	67, 46	17	14	3	-	-	100
3953	Lead pencils and crayons	48, 46, 40, 23	654	475	98	80	1	100
3954	Hand stamps and stencils	51, 02, 46, 38, 39	449	315	111	7	6	99
3954	Artists' materials	51	77	77	-	-	-	100
3955	Carbon paper and inked ribbons	02, 51	175	117	58	-	-	100
3961	Costume jewelry	51, 06, 03, 02	48	42	3	2	1	100
3962	Feathers, plumes and artificial flowers	51, 08, 06, 67, 35	768	364	204	83	63	99
3963	Buttons	51, 06	100	95	5	-	-	100
3964	Needles, pins and fasteners	20, 51	2,912	2,713	199	-	-	100
3971	Plastics products, n.e.c.	46, 65, 51, 35, 25	7,962	2,312	1,193	1,029	674	74

Code	Industry	Leading counties by rank order	Number of employees (total for the industry and for the leading counties)					Percent of employment in leading counties	
			Total	1	2	3	4		5
3981	Brooms and brushes	02, 51, 06, 46, 36	857	280	240	182	62	49	95
3982	Cork products	04, 36, 48, 51	481	311	132	24	14	-	100
3984	Candles	51, 38, 09, 48, 23	125	107	11	4	2	1	100
3985	Fireworks and pyrotechnics	09, 26, 37, 06	92	34	29	28	1	-	100
3987	Lamp shades	51, 35, 02, 65	722	533	142	40	7	-	100
3988	Morticians' goods	06, 35, 02, 67, 51	2, 472	502	483	388	290	242	77
3991	Beauty and barber shop equipment	41, 51	284	282	2	-	-	-	100
3992	Furs, dressed and dyed	48, 13	131	111	20	-	-	-	100
3993	Signs and advertising displays	51, 02, 20, 25, 06	1, 622	715	318	113	84	79	81
3994	Hair work	51	263	263	-	-	-	-	100
3995	Umbrellas	51, 36, 02	666	341	313	12	-	-	100
3997	Soda-fountain and bar equipment	51	55	55	-	-	-	-	100
3999	Miscellaneous products, n.e.c.	45, 42, 07, 51, 21	2, 096	844	313	287	271	158	89
1911	Guns, howitzers, mortars, and related equipment	67, 04	812	648	164	-	-	-	100
1921	Artillery ammunition, over 30 M M	35, 67, 23, 36	2, 781	1, 430	822	324	205	-	100
1929	Ammunition, n.e.c.	02	637	637	-	-	-	-	100
1931	Tanks and tank components	32, 23	105	94	11	-	-	-	100
1951	Small arms, 30 M M and under	51, 02	28	15	13	-	-	-	100
1961	Small arms ammunition, 30 MM and under	09	98	98	-	-	-	-	100
1999	Ordnance and accessories, n.e.c.	51, 09, 67	323	118	117	88	-	-	100





# INDUSTRIAL STATISTICS FOR PENNSYLVANIA 1951 to 1955

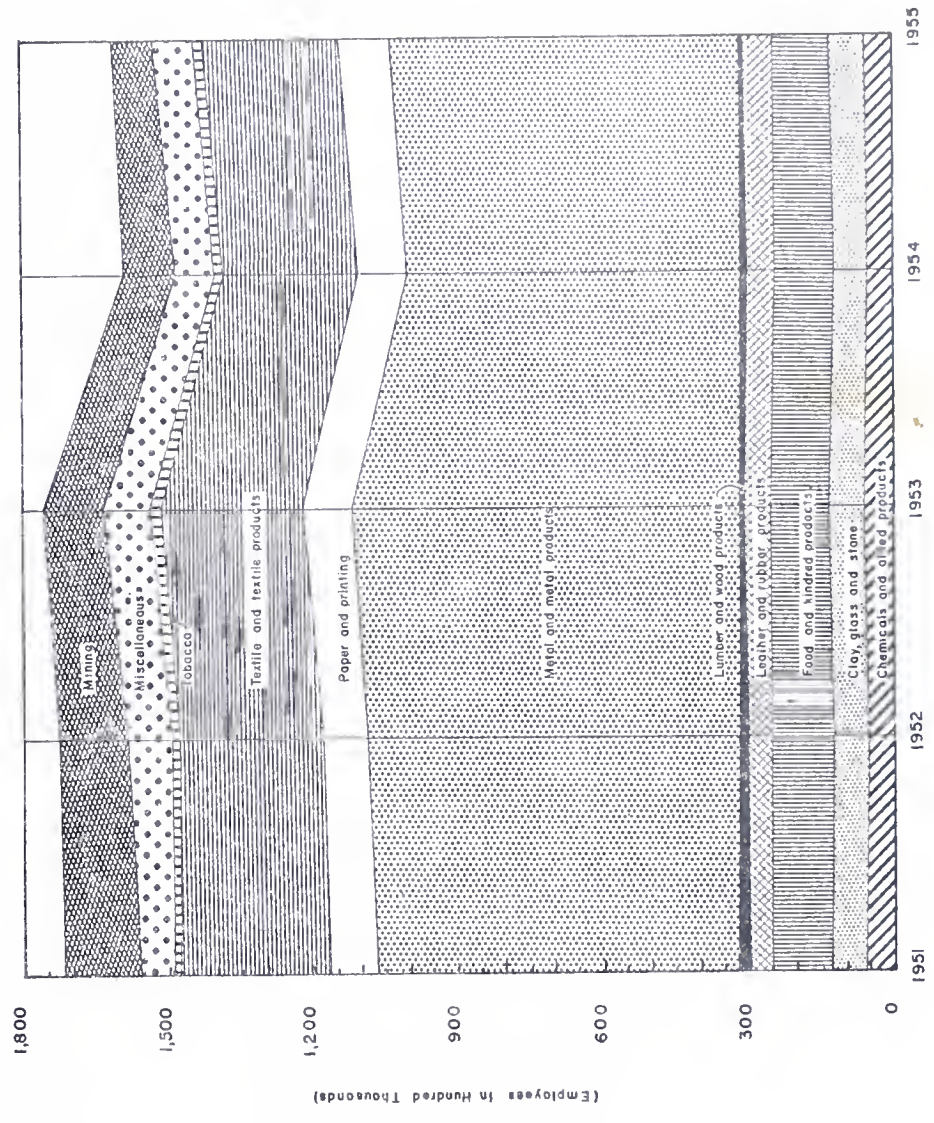
DEPARTMENT OF  
INTERNAL AFFAIRS  
Genevieve Blatt, Secretary

BUREAU OF STATISTICS  
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MARCH 1959

SPECIAL RELEASE S-2

NUMBER OF EMPLOYEES BY TYPE OF INDUSTRY FOR MANUFACTURING  
AND MINING INDUSTRIES: 1951 TO 1955







## FOREWORD

For almost 80 years the statistics collected and compiled by the Bureau of Statistics were published in hard bound books--first in the Annual Reports of the Bureau and then in Productive Industries Reports which were issued periodically between 1913 and 1950. Unfortunately there were many disadvantages to such publications. Not only were they time consuming and expensive to prepare, but they were also poorly suited to the modern requirements of a dynamic statistical program.

In order to present a statistical program designed to meet specific needs in an increased number of areas, and to present statistics quickly and efficiently, the Bureau of Statistics began a program of presenting a number of separate releases in 1955.

In addition to changing the format of presenting statistics, the Bureau also modernized the way in which statistics were collected, edited, and classified. Modernized report forms and editing procedures, and Standard Industrial Classifications were adopted along with an emphasis on presenting explanatory notes to accompany each statistical release.

We are pleased to present this special release which has been designed to bridge the gap between the statistics published in the Productive Industry Reports and in our present releases. As always, we will appreciate comments and suggestions about this release.



Genevieve Blatt  
Secretary of Internal Affairs



# INDUSTRIAL STATISTICS FOR PENNSYLVANIA: 1951 TO 1955

	Page
Introduction and Explanatory Notes.....	i
Table 1 General Statistics for All Industrial Establishments in Pennsylvania: 1951 to 1955.....	1
Table 2 General Statistics by Major Industry Groups in Pennsylvania: 1951 to 1955.....	2
Table 3 Industrial Statistics for Pennsylvania by County: 1951.....	3
Table 4 Industrial Statistics for Pennsylvania by County: 1952.....	3
Table 5 Industrial Statistics for Pennsylvania by County: 1953.....	4
Table 6 Industrial Statistics for Pennsylvania by County: 1954.....	4
Table 7 Industrial Statistics for Pennsylvania by County: 1955.....	5
Table 8 General Statistics for Laundry, Cleaning, and Dyeing Establishments in Pennsylvania, by County: 1955.....	5
Table 9 Industrial Statistics for Urban Places in Pennsylvania: 1951.....	6
Table 10 Industrial Statistics for Urban Places in Pennsylvania: 1952.....	7
Table 11 Industrial Statistics for Urban Places in Pennsylvania: 1953.....	7
Table 12 Industrial Statistics for Urban Places in Pennsylvania: 1954.....	8
Table 13 Industrial Statistics for Urban Places in Pennsylvania: 1955.....	9
Table 14 General Statistics for Laundry, Cleaning, and Dyeing Establishments for Urban Places in Pennsylvania: 1955.....	10
Appendix A - Copy of the Industrial Report Form used for the 1951 through 1955 Industrial census for Manufacturers, Mine and Quarry Establishments (except anthracite and bituminous coal), Railroad Repair Establishments, Nonmanufacturing Establishments with subsidiary manufacturing operations, and Laundries.....	11
Copy of the Report Form used for the 1951 through 1955 Industrial Census for Anthracite and Bituminous Coal Producers.....	12



## INDUSTRIAL STATISTICS FOR PENNSYLVANIA: 1951 TO 1955

### A. INTRODUCTION:

This report presents data collected in the 1951 through 1955 annual industrial censuses taken by the Bureau of Statistics in the Department of Internal Affairs. During these years the coverage of the industrial censuses included manufacturers, mineral producers, railroad repair establishments, nonmanufacturing establishments with subsidiary manufacturing operations, and laundries. Report forms used in these censuses are shown in Appendix A. The filing of these report forms is required by the Act of April 20, 1921, P.L. 193.

### B. EXPLANATION OF TERMS:

1. An industrial establishment for purposes of this report is defined as a single physical location performing the following types of operations: manufacturing; mining or quarrying; railroad repair; or laundry work, cleaning, or dyeing. A nonmanufacturing establishment with subsidiary manufacturing operations is considered an industrial establishment, but only that portion of employment, wages and salaries, and value of production associated with manufacturing operations has been included in the statistical tabulations. In the tables for 1955, statistics for laundries are presented separately from the statistics for other establishments. Additional data on nonmanufacturing establishments with subsidiary manufacturing operations are presented in Report S-3 Industrial Statistics for Pennsylvania, 1916 to 1956.

2. Number of employees was defined as the "average number employed". Separate figures for "wage earners" were combined with "salaried persons and office force including proprietors, partners, officers, superintendents, managers, salesmen, clerks, bookkeepers, stenographers, and any other office workers".

3. Wages and salaries was specified as the total wages and salaries for the employees defined above.

4. Capital invested was defined as the amount of money invested in plant and equipment including the value of land used in connection with the plant.

5. Value of production was defined as the total market value or contract price received.

6. Value added by manufacture is the value of production minus the cost of materials, supplies, and containers; cost of fuel; cost of purchased electric energy; and the cost of contract work done by others. Value added by manufacture was not computed for anthracite and bituminous coal producers; for producers of anthracite, bituminous coal, iron ore, sand and gravel; for railroad repair establishments; or for laundry, cleaning, and dyeing establishments.

### C. GEOGRAPHIC AREAS:

Urban places used for industrial tabulations include 98 cities and boroughs, and one township in Pennsylvania. In the table for 1952, only 73 urban places are presented; in the table for 1953, 75 of the urban places are shown.

### D. COMPARABILITY WITH OTHER STATISTICAL SERIES:

Because of the unique system of industrial classifications and industrial coverage employed by the Bureau of Statistics for these tabulations, comparability with other statistical series is very limited. However, these data are directly comparable with data collected in the previous Industrial Censuses taken by the Bureau and presented in the Reports on Productive Industries published by the Department of Internal Affairs and on sale by the Division of Documents, P.O. Box 41, Harrisburg, Pennsylvania. A discussion of the comparability of the data for the Industrial Census prior to 1956 with data from the 1956 Industrial Census is included in Report S-3, Industrial Statistics for Pennsylvania, 1916 to 1956.

### E. CONFIDENTIALITY OF DATA FOR INDIVIDUAL COMPANIES:

Statistical data for manufacturing and mining establishments, except for total number of employees, are confidential and are not disclosed for individual companies. The Bureau of Statistics follows a rule of not releasing data for fewer than three establishments, or for more than three establishments where data for areas smaller than counties could be subtracted from county totals revealing data for individual companies. When it has not been possible to publish both county and city data for industry groups, preference has been given to county data.





TABLE 1: GENERAL STATISTICS FOR ALL INDUSTRIAL ESTABLISHMENTS  
IN PENNSYLVANIA: 1951 TO 1955

(Money figures in thousands of dollars. Industries included are as follows: manufacturing, mining, railroad repair, laundries, and nonmanufactures with subsidiary manufacturing operations.)

	1951	1952	1953	1954	1955
Number of establishments	21,099	20,828	20,617	20,491	20,204
Number of employees	1,808,050	1,799,529	1,823,890	1,635,000	1,669,423
Wages and salaries	\$6,041,990	\$6,178,286	\$6,754,933	\$5,944,965	\$6,425,789
Capital invested	\$6,572,598	\$7,083,377	\$7,952,946	\$8,250,089	\$8,358,789
Value of production	\$23,097,663	\$22,477,887	\$24,600,421	\$21,212,557	\$24,245,728
Value added by manufacture	\$9,491,648	\$9,561,492	\$10,587,538	\$9,549,463	\$10,861,762

TABLE 2: GENERAL STATISTICS BY MAJOR INDUSTRY GROUPS IN PENNSYLVANIA: 1951 TO 1955

(Industry groups are as follows: 1. Chemicals and allied products, 2. Clay, glass, and stone products, 3. Food and kindred products, 4. Leather and rubber products, 5. Lumber and wood products, 6. Metal and metal products, 7. Paper and printing industries, 8. Textile and textile products, 9. Tobacco manufactures, 10. Miscellaneous manufactures.)

Year	All industries	Number of establishments				by major industry group				Laundries	Railroad repair	Mining
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (a)	
1951	21,099	18,623	817	3,655	367	2,023	3,786	2,238	3,574	169	461	1,813
1952	20,828	18,420	808	3,554	362	1,992	3,856	2,204	3,474	158	460	1,752
1953	20,617	18,317	817	3,458	355	1,934	3,960	2,213	3,406	143	447	1,664
1954	20,491	17,838	811	3,355	348	1,845	3,937	2,182	3,263	128	875	1,595
1955	19,370	17,540	813	3,254	337	1,804	3,883	2,172	3,197	122	834	1,649

Year	Total manufacturers	Employment (in thousands of employees)				Wages and salaries (in millions of dollars)				Laundries	Railroad repair	Mining
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)			
1951	1,808.0	1,574.7	60.9	69.5	120.4	46.0	751.8	96.5	314.3	15.8	63.3	155.3
1952	1,799.4	1,590.1	60.0	65.8	118.9	46.2	761.5	95.8	301.8	16.9	88.0	142.8
1953	1,823.8	1,633.2	60.8	67.2	119.7	48.8	787.0	100.0	302.4	16.8	95.8	124.5
1954	1,635.1	1,477.2	60.0	61.0	115.8	46.7	681.4	99.8	286.9	16.4	78.5	100.7
1955	1,642.9	1,521.0	63.2	64.1	115.0	49.0	704.0	102.6	292.4	16.6	81.4	88.0

Year	Value of Production	Value added by manufacture (in millions of dollars)				Wages and salaries (in millions of dollars)				Laundries	Railroad repair	Mining
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)			
1951	\$23,097.6	\$21,588.0	\$1,992.4	\$644.9	\$2,351.4	\$587.8	\$292.2	\$11,137.3	\$1,233.2	\$2,375.7	\$147.3	\$825.8
1952	22,478.0	21,152.0	1,977.7	640.8	2,331.4	507.5	281.7	10,893.9	1,188.5	2,208.1	170.7	951.7
1953	24,600.5	23,301.0	2,049.5	705.4	2,370.6	530.0	291.9	12,504.7	1,261.4	2,207.8	174.8	1,204.9
1954	21,242.5	20,236.0	2,062.4	661.0	2,380.1	491.2	288.3	9,996.7	1,266.4	1,989.6	167.4	932.9
1955	24,142.6	23,145.7	2,376.8	807.4	2,415.8	604.7	297.5	11,903.4	1,356.7	2,179.9	169.5	1,034.0

Year	Value added by manufacture (in millions of dollars)	Value added by manufacture (in millions of dollars)				Value added by manufacture (in millions of dollars)				Laundries	Railroad repair	Mining
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)			
1951	\$9,491.7	\$9,423.1	\$672.1	\$403.1	\$678.9	\$231.0	\$140.1	\$5,068.4	\$673.1	\$1,116.8	\$70.5	\$369.1
1952	9,561.6	9,501.6	696.4	400.4	680.0	226.2	139.5	5,104.5	664.9	1,054.4	82.7	452.6
1953	10,587.6	10,524.4	728.1	445.6	729.0	234.5	146.4	5,775.8	711.4	1,071.5	84.0	598.1
1954	9,549.4	9,493.1	729.9	417.9	734.4	222.8	130.2	4,969.9	718.6	998.2	79.8	491.4
1955	10,862.7	10,774.7	852.2	525.4	804.3	303.8	146.2	5,678.0	772.9	1,071.6	82.5	537.8

(a) Not including laundries, cleaning and dyeing establishments.

TABLE 3: INDUSTRIAL STATISTICS FOR PENNSYLVANIA BY  
COUNTY: 1951  
(All money figures in thousands of dollars)

County	Estab- lish- ments	No. of employees	Wages and salaries	Capital invested	Value of products	Value Added by Manu- facture
Adams	111	7,085	\$13,777	\$13,872	\$53,501	\$24,022
Allegheny	2,132	236,558	1,001,570	1,440,065	4,079,562	1,626,102
Armstrong	136	10,810	41,478	52,946	220,875	88,612
Beaver	233	50,795	214,697	316,626	914,070	394,877
Bedford	85	1,776	3,458	2,978	7,479	3,556
Berks	688	60,126	184,019	156,228	575,682	294,095
Blair	172	24,452	76,748	66,421	192,326	46,382
Bradford	69	12,765	14,525	12,765	64,981	35,381
Bucks	395	24,432	77,238	78,253	280,195	124,156
Butler	198	11,994	43,720	69,016	190,118	66,520
Cambria	334	40,415	143,297	178,286	431,170	117,229
Cameron	12	2,913	9,792	5,878	29,900	12,920
Carbon	109	12,838	38,369	26,219	86,478	33,985
Centre	122	5,658	16,267	15,347	63,934	27,555
Chester	251	21,027	71,407	60,424	334,742	140,240
Clarion	118	3,453	9,992	13,158	32,232	11,872
Cleatfield	270	11,616	32,360	32,690	90,122	26,108
Clinton	84	8,503	25,490	25,378	105,182	49,455
Columbia	152	12,179	33,999	30,587	136,490	42,916
Crawford	135	9,233	32,378	46,964	118,673	63,762
Cumberland	137	12,327	32,801	25,386	108,208	38,183
Dauphin	329	30,434	94,510	477,395	157,896	157,896
Delaware	376	55,906	221,116	261,865	1,161,314	391,695
Elk	82	9,104	28,133	29,115	92,120	57,515
Erie	430	50,442	183,184	135,219	706,985	365,294
Fayette	266	19,694	70,591	66,508	193,260	47,299
Forest	15	600	1,641	7,053	99,549	50,355
Franklin	139	10,301	28,470	29,466	99,549	50,355
Fulton	22	149	239	636	1,165	173
Greene	64	9,057	37,704	94,677	70,427	1,735
Huntingdon	79	5,467	15,552	11,690	33,467	18,061
Indiana	155	8,922	31,158	46,390	69,308	13,116
Jefferson	161	6,758	18,940	18,780	49,912	22,321
Junata	44	1,010	1,588	3,955	49,912	22,321
Lackawanna	579	43,323	110,460	100,997	305,724	115,351
Lancaster	622	18,334	127,106	130,416	513,008	238,538
Lawrence	176	68,616	43,019	43,019	215,179	108,029
Lebanon	212	15,918	44,684	39,225	116,966	76,260
Lehigh	486	39,809	117,018	105,255	454,159	196,821
Lucerne	690	71,312	194,925	184,432	467,080	144,172
Lycoming	261	19,967	57,670	48,631	224,138	100,853
McKean	113	6,867	21,614	28,917	97,358	41,012
Mercer	161	25,021	103,161	197,654	459,936	197,654
Mifflin	77	8,650	28,262	32,339	82,711	47,355
Monroe	98	4,975	13,845	9,273	41,668	21,672
Montgomery	756	65,307	227,770	224,860	874,297	417,090
Montour	20	1,850	4,918	17,861	16,472	9,700
Northampton	435	55,883	178,818	172,051	616,029	275,686
Northumberland	243	19,887	52,130	40,676	3,328	71,738
Perry	65	1,154	2,204	2,057	6,865	3,328
Philadelphia	5,309	336,242	1,169,994	1,157,071	4,926,118	2,090,321
Pike	21	219	468	429	1,172	607
Potter	41	1,178	2,502	3,074	7,153	3,323
Schuylkill	379	33,309	85,644	62,523	238,823	64,173
Snyder	63	1,848	4,069	4,342	14,098	5,864
Somerset	237	8,218	23,274	26,687	47,168	6,892
Sullivan	20	837	1,692	1,461	4,851	1,823
Susquehanna	49	2,507	5,310	4,588	19,512	6,298
Tioga	53	3,489	10,101	9,650	43,524	17,710
Union	42	1,864	3,478	2,658	13,295	5,655
Venango	134	9,700	32,581	40,302	161,643	61,162
Warren	109	5,871	19,885	34,078	69,112	34,078
Washington	255	36,138	138,893	139,475	469,997	147,636
Wayne	77	2,742	5,005	3,638	18,922	8,592
Westmoreland	488	52,746	197,524	198,518	729,973	326,190
Wyoming	29	902	1,640	1,426	8,386	2,362
York	654	47,968	134,511	137,175	501,847	245,592
Total	21,099	1,808,050	\$6,041,990	\$6,572,598	\$23,097,663	\$9,491,648

TABLE 4: INDUSTRIAL STATISTICS FOR PENNSYLVANIA BY  
COUNTY: 1952  
(All money figures in thousands of dollars)

County	Estab- lish- ments	No. of employees	Wages and salaries	Capital invested	Value of products	Value Added by Manu- facture
Adams	108	7,263	\$14,238	\$14,189	\$54,952	\$26,339
Allegheny	2,091	253,502	1,014,511	1,560,853	3,872,079	1,533,509
Armstrong	150	9,607	35,771	55,774	184,994	74,072
Beaver	229	51,204	216,903	411,169	859,645	382,795
Bedford	81	1,737	3,715	3,224	8,089	4,259
Berks	677	57,488	176,907	163,790	543,642	274,651
Blair	172	21,077	68,487	71,477	173,593	50,050
Bradford	69	4,569	13,881	11,977	58,571	33,581
Bucks	394	28,772	93,771	92,434	345,717	184,177
Butler	211	12,313	48,786	71,724	194,882	68,705
Cambria	316	38,221	137,307	195,416	370,846	122,057
Cameron	9	3,036	10,404	6,804	34,461	17,335
Carbon	109	12,254	37,950	23,646	84,583	35,014
Centre	123	5,673	17,847	18,124	71,011	30,153
Chester	255	21,380	73,837	71,149	289,874	128,409
Clarion	112	3,106	9,910	13,229	30,450	11,643
Cleatfield	263	10,917	30,628	33,864	84,314	27,111
Clinton	81	8,093	26,268	29,455	106,346	52,610
Columbia	150	12,657	37,736	32,148	115,226	55,756
Crawford	137	9,986	33,015	47,772	115,226	61,661
Cumberland	160	12,320	33,186	28,237	110,304	39,907
Dauphin	326	32,450	107,487	95,045	459,951	161,758
Delaware	377	61,602	256,910	266,572	1,319,127	473,258
Elk	76	8,335	29,026	27,059	91,791	59,555
Erie	418	44,333	178,822	142,257	623,492	331,898
Fayette	258	18,337	58,470	67,240	147,715	40,070
Forest	15	494	2,146	2,146	103,007	53,151
Franklin	135	9,872	28,545	29,670	103,007	53,151
Fulton	23	153	276	672	1,316	1,624
Greene	63	8,853	32,721	97,653	58,371	18,834
Huntingdon	77	5,191	14,960	27,513	33,806	15,303
Indiana	152	8,495	27,513	46,281	67,908	22,765
Jefferson	150	6,402	18,293	18,234	48,214	22,765
Junata	43	1,086	1,686	1,195	3,795	2,118
Lackawanna	565	41,157	111,160	96,353	290,494	111,663
Lancaster	607	42,231	131,841	130,785	515,297	247,765
Lawrence	169	17,793	70,016	47,331	212,258	106,291
Lebanon	209	15,971	45,473	39,610	175,209	73,954
Lehigh	487	39,840	121,545	108,600	450,717	203,104
Lucerne	678	70,341	194,413	182,104	489,397	157,137
Lycoming	256	20,840	63,585	50,360	237,859	111,756
McKean	109	7,538	23,833	31,281	98,672	45,916
Mercer	163	25,067	107,086	77,204	456,172	211,769
Mifflin	77	8,388	28,243	34,488	75,190	41,068
Monroe	98	4,461	12,792	9,261	37,752	20,695
Montgomery	763	66,272	238,242	261,092	853,347	428,688
Montour	17	1,879	4,842	4,681	15,378	7,734
Northampton	426	55,752	178,400	197,511	595,853	278,316
Northumberland	247	21,590	57,991	64,996	239,001	93,915
Perry	59	1,234	2,388	2,031	7,515	3,591
Philadelphia	5,249	339,126	1,234,867	1,224,011	4,780,802	2,124,551
Pike	23	200	497	409	1,081	653
Potter	38	1,224	2,981	2,502	7,306	3,921
Schuylkill	389	33,326	86,442	68,875	238,416	67,997
Snyder	63	2,003	4,258	5,445	13,710	6,264
Somerset	239	7,930	21,203	25,890	42,533	18,139
Sullivan	19	732	1,635	1,226	4,985	7,812
Susquehanna	46	2,649	6,795	4,484	21,891	16,296
Tioga	55	3,188	9,654	9,353	32,461	16,296
Union	40	1,741	3,353	2,186	12,811	5,314
Venango	129	9,551	33,102	42,360	147,208	58,616
Warren	102	5,817	20,653	28,139	70,602	34,610
Washington	258	34,284	127,526	128,713	407,187	126,164
Wayne	78	2,906	5,956	3,865	10,332	10,332
Westmoreland	481	51,503	192,658	214,502	652,105	294,789
Wyoming	32	991	1,921	1,566	7,620	2,332
York	647	48,206	141,761	150,548	516,572	253,884
Total	20,828	1,799,529	\$6,178,286	\$7,083,377	\$22,477,887	\$9,561,492



TABLE 5: INDUSTRIAL STATISTICS FOR PENNSYLVANIA  
BY COUNTY: 1953

(Money figures in thousands of dollars)

County	Indus-tries	Num-ber of Employees	Wages and Salaries	Capital Invested	Value of Products	Value Added by Manufacture
Adams	109	7,429	\$15,558	\$15,396	\$58,540	\$28,003
Allegheny	2,074	250,307	1,108,893	1,653,506	4,416,491	1,771,650
Armstrong	150	8,895	36,812	52,541	197,181	78,832
Beaver	220	51,471	251,366	426,772	1,028,652	451,762
Bedford	76	1,806	3,772	2,984	8,978	4,635
Berks	660	60,042	192,894	212,976	586,232	300,285
Blair	171	21,779	74,692	75,875	196,185	53,017
Bradford	63	5,321	17,094	15,672	68,341	38,256
Bucks	402	39,877	157,774	566,502	464,312	261,290
Butler	198	12,648	53,683	73,279	206,267	75,989
Cambria	319	38,014	150,838	191,941	462,772	160,199
Cameron	11	2,837	11,772	7,267	36,278	21,119
Carbon	109	11,604	34,532	23,148	33,327	33,327
Centre	118	5,949	18,783	20,082	74,910	35,334
Chester	257	21,860	81,872	75,138	33,406	130,965
Clarion	109	3,070	10,348	14,119	33,049	14,666
Clearfield	282	10,365	29,212	34,750	79,219	25,541
Clinton	76	8,211	27,445	30,319	107,737	53,626
Columbia	143	13,021	43,480	30,217	213,800	69,175
Crawford	139	9,670	36,892	46,577	121,773	63,312
Cumberland	163	12,601	37,736	36,422	129,728	50,071
Dauphin	316	31,388	111,617	100,625	499,878	192,509
Delaware	381	65,311	294,236	315,323	1,414,931	498,120
Elk	70	8,451	20,889	27,549	94,917	60,308
Erie	426	48,392	195,720	145,464	680,533	357,780
Fayette	240	17,620	65,945	67,737	171,878	47,311
Forest	13	520	1,616	2,430	5,326	2,747
Franklin	135	10,155	30,356	31,459	109,524	54,056
Fulton	23	136	289	643	1,313	209
Greene	55	8,358	38,478	104,581	73,299	1,701
Huntingdon	75	4,919	15,037	10,513	33,994	23,840
Indiana	157	7,803	26,951	47,694	70,133	18,045
Jefferson	131	5,982	20,591	18,467	54,594	28,550
Juniata	40	978	1,555	1,204	4,322	2,370
Lackawanna	560	39,740	104,946	92,769	273,378	112,670
Lancaster	604	44,735	145,687	140,357	552,185	285,295
Lawrence	171	17,681	75,402	53,901	246,272	122,250
Lebanon	205	16,041	48,969	39,998	77,058	77,058
Lehigh	484	39,403	127,678	112,254	466,615	208,610
Luzerne	691	65,646	173,062	180,657	461,984	165,368
Lycoming	247	22,514	72,487	53,697	248,936	120,613
McKean	111	7,847	25,270	33,687	102,343	48,994
Meeker	167	25,279	119,142	86,919	520,581	235,988
Mifflin	76	8,032	27,995	34,124	74,615	40,995
Monroe	99	4,677	13,395	9,763	39,148	21,473
Montgomery	784	71,096	268,199	281,594	916,841	465,329
Montour	17	2,165	7,457	5,676	23,821	11,973
Northampton	431	56,441	197,673	209,610	698,058	336,637
Northumberland	243	20,569	57,292	65,107	255,875	100,898
Perry	58	1,251	2,722	2,125	8,013	3,893
Philadelphia	5,162	363,624	1,332,228	1,305,566	4,998,488	2,226,684
Pike	22	191	371	409	1,018	583
Potter	39	1,306	3,045	2,595	6,580	3,694
Schuylkill	370	32,401	81,426	68,774	225,046	74,736
Snyder	64	2,486	4,878	4,875	14,540	6,932
Somerset	216	7,106	19,048	26,212	37,975	8,005
Sullivan	16	776	1,708	1,579	4,961	2,063
Susquehanna	47	3,228	9,476	4,803	25,901	12,481
Tioga	57	3,224	10,649	9,147	37,856	19,078
Union	36	1,665	3,596	2,850	13,346	5,939
Venango	126	9,277	34,867	45,426	158,241	60,675
Warren	101	5,807	21,283	26,774	74,540	36,950
Washington	256	34,983	149,057	183,906	469,025	149,899
Wayne	76	3,140	6,683	4,351	27,767	13,558
Westmoreland	470	51,870	214,494	230,390	727,768	315,670
Wyoming	33	951	2,072	1,642	7,820	2,708
York	647	51,908	164,448	162,237	572,916	280,739
Total	20,617	1,823,890	\$6,754,933	\$7,952,946	\$24,600,421	\$10,587,538

TABLE 6: INDUSTRIAL STATISTICS FOR PENNSYLVANIA  
BY COUNTY: 1954  
(Money figures in thousands of dollars)

County	Number of Establishments	Number of Employees	Wages and Salaries	Capital Invested	Value of Products	Value Added by Manufacture
Adams	110	7,535	\$16,119	\$15,971	\$60,776	\$27,583
Allegheny	2,100	215,917	943,543	1,835,405	3,513,017	1,587,326
Armstrong	148	8,184	33,344	48,168	189,210	77,742
Beaver	236	46,689	223,176	433,901	893,126	415,331
Bedford	73	1,465	3,323	3,238	8,132	4,488
Berks	665	54,934	171,511	214,658	522,425	274,739
Blair	170	15,490	51,807	80,392	137,755	49,310
Bradford	65	4,782	16,188	16,056	62,342	34,540
Bucks	392	35,935	154,536	570,454	469,801	252,745
Butler	201	11,522	46,298	73,391	168,689	67,303
Cambria	311	31,549	112,736	178,051	301,840	106,223
Cameron	13	2,132	8,533	7,648	23,401	14,437
Carbon	114	9,747	26,680	18,986	64,006	29,814
Centre	124	5,842	16,797	20,269	61,559	29,831
Chester	260	22,283	82,559	81,856	315,542	150,304
Clarion	112	3,191	10,137	14,094	33,143	15,093
Clearfield	275	9,239	24,936	36,087	69,501	23,664
Clinton	74	6,685	23,301	29,925	97,425	47,684
Columbia	149	12,238	37,640	30,643	127,832	55,008
Crawford	143	8,819	32,677	49,793	104,650	57,608
Cumberland	166	10,866	31,684	36,703	118,071	46,251
Dauphin	326	28,205	93,663	97,597	390,092	143,514
Delaware	390	55,616	259,358	336,068	1,291,919	474,305
Elk	75	7,447	27,892	28,789	89,172	58,942
Erie	448	42,593	171,077	149,341	575,647	289,218
Fayette	228	15,191	49,060	66,879	116,284	37,497
Forest	13	509	1,625	2,967	6,123	3,358
Franklin	141	10,045	28,055	33,627	98,848	51,641
Fulton	23	144	231	661	853	156
Greene	47	7,701	30,134	104,128	59,796	1,958
Huntingdon	70	3,617	10,942	9,173	29,245	17,931
Indiana	163	6,398	22,171	47,976	52,067	15,444
Jefferson	146	5,523	17,320	18,900	44,561	22,790
Juniata	39	825	1,768	1,120	5,094	2,569
Lackawanna	554	37,919	94,722	80,165	250,608	114,775
Lancaster	600	39,941	131,267	130,639	517,590	256,901
Lawrence	168	16,003	67,131	60,257	209,267	102,320
Lebanon	208	15,084	45,003	42,284	155,000	68,385
Lehigh	488	38,233	115,961	111,959	408,039	197,411
Luzerne	676	57,141	150,650	180,382	410,792	148,811
Lycoming	245	19,460	62,320	55,538	212,951	105,418
McKean	115	7,273	25,124	35,104	95,141	46,831
Meeker	169	21,697	93,103	89,999	379,375	190,651
Mifflin	76	7,822	24,345	34,764	63,887	32,435
Monroe	101	4,482	13,308	10,746	38,743	21,302
Montgomery	797	63,710	237,680	289,567	795,563	398,871
Montour	17	2,006	6,601	5,931	23,356	11,464
Northampton	424	50,622	169,384	219,705	541,775	279,801
Northumberland	247	17,280	45,939	57,443	175,099	72,890
Perry	58	929	2,059	2,240	7,639	3,092
Philadelphia	4,994	336,615	1,242,602	1,322,617	4,687,978	2,076,578
Pike	21	194	357	417	1,126	655
Potter	36	1,096	2,402	2,049	6,112	3,229
Schuylkill	384	31,278	70,985	68,207	196,385	76,342
Snyder	65	1,933	4,503	5,234	13,562	6,444
Somerset	219	5,632	12,293	24,696	28,627	8,497
Sullivan	17	746	1,473	1,202	5,277	2,124
Susquehanna	47	2,767	7,072	5,024	21,740	10,604
Tioga	60	3,331	11,095	10,287	39,567	19,898
Union	36	1,605	3,405	2,895	12,504	5,897
Venango	116	7,952	27,952	45,293	134,825	51,609
Warren	98	5,081	19,831	27,867	69,362	34,919
Washington	239	31,982	131,483	202,877	439,413	148,238
Wayne	76	2,616	6,288	4,060	24,929	13,284
Westmoreland	450	44,434	178,966	232,178	574,298	279,608
Wyoming	29	871	1,771	1,430	6,668	2,237
York	651	48,607	155,838	194,124	563,415	217,595
Total	20,491	1,635,000	\$5,944,965	\$8,250,089	\$21,212,557	\$9,549,463

TABLE 7: INDUSTRIAL STATISTICS FOR PENNSYLVANIA BY COUNTY: 1955  
(Money figures in thousands of dollars. Laundries, cleaning and dyeing establishments are not included.)

County	Number of plants	Number of employees	Total wages and salaries	Capital invested	Value of production	Value added by manufacture <sup>1</sup>
Total all counties	19,370	1,642,865	\$1,367,387	\$8,304,521	\$24,142,580	\$10,861,762
Adams	105	7,634	17,705	19,975	74,379	35,450
Allegheny	1,921	218,477	1,028,256	4,090,911	1,792,810	99,093
Armstrong	141	8,246	37,750	47,699	241,459	99,093
Beaver	217	52,663	258,842	450,994	1,093,824	508,120
Bedford	59	1,290	3,177	2,837	9,237	5,807
Berks	635	55,844	187,549	180,125	621,075	317,234
Blair	160	20,498	66,402	83,177	201,678	79,168
Bradford	62	5,206	18,055	17,033	66,710	37,288
Bucks	384	35,541	152,635	587,285	590,278	308,405
Butler	196	12,475	55,936	68,058	208,724	83,034
Cambria	284	32,504	138,295	182,744	416,144	151,403
Cameron	12	2,127	9,120	7,934	27,920	19,081
Carbon	119	11,288	32,403	19,110	90,044	41,980
Centre	116	5,989	19,151	22,562	81,486	34,459
Chester	254	21,870	88,905	79,261	369,214	164,821
Clarion	99	2,896	10,662	14,517	36,744	16,225
Clelland	276	10,062	30,938	34,170	89,040	29,966
Cleburn	69	6,704	24,212	30,133	107,141	52,490
Columbia	141	12,262	39,233	31,012	164,739	62,057
Crawford	135	9,834	37,187	50,635	118,813	62,250
Cumberland	157	11,943	37,226	41,486	146,551	56,783
Dauphin	306	27,736	101,897	99,761	473,846	191,256
Delaware	256	52,916	243,790	342,733	1,284,040	479,826
Elk	71	7,852	29,767	33,785	95,762	62,812
Erie	423	39,493	164,733	149,752	565,530	290,299
Fayette	214	13,102	49,141	62,240	132,264	45,819
Franklin	14	530	1,814	3,381	7,515	3,506
Fulton	132	9,854	29,737	36,151	100,662	52,959
Greene	21	175	363	1,087	1,078	285
Huntingdon	42	7,203	34,488	104,640	73,649	2,214
Indiana	65	3,644	11,683	9,307	32,637	19,502
Jefferson	147	7,037	25,615	44,075	66,971	19,933
Johnston	133	5,575	18,658	19,000	51,960	28,902
Juniata	40	918	1,967	1,219	5,636	2,921
Lackawanna	543	38,364	96,650	114,207	275,621	127,098
Lancaster	600	45,922	160,917	158,716	616,623	314,253
Lawrence	154	15,317	68,175	68,175	217,628	107,706
Lebanon	199	15,375	47,859	43,570	181,382	78,489
Lehigh	470	40,090	133,034	118,892	507,693	229,311
Luzerne	677	55,569	150,183	175,308	431,849	167,976
Lycoming	230	20,291	64,378	59,507	224,585	105,850
McKean	97	7,543	25,933	106,744	53,475	41,365
Mercer	156	23,568	111,521	94,123	474,409	206,437
Mifflin	70	7,272	26,442	35,352	77,991	41,365
Monroe	97	4,480	13,220	10,949	36,518	21,815
Montgomery	749	65,510	261,540	305,739	982,363	516,676
Northampton	15	1,826	6,868	5,951	26,615	11,820
Northumberland	411	52,387	192,134	223,507	668,205	345,036
Perry	226	16,736	45,109	55,519	170,361	81,376
Philadelphia	54	945	2,163	3,104	9,146	4,337
Pike	4,670	323,625	1,262,548	1,324,743	5,003,146	2,221,272
Potter	17	145	287	391	884	443
Schuylkill	34	1,147	2,607	1,843	6,759	3,714
Snyder	404	28,021	72,061	65,371	213,064	86,195
Somerset	65	5,227	4,115	5,227	11,168	6,161
Susquehanna	200	5,622	14,132	23,451	34,767	10,562
Tioga	16	701	1,542	1,498	6,122	2,658
Township	49	2,938	7,876	5,135	20,191	9,596
Union	55	3,329	11,439	11,539	41,487	20,803
Venango	36	1,765	4,108	3,454	12,756	6,249
Warren	106	8,260	32,542	50,560	150,773	60,417
Washington	91	5,299	21,119	28,695	70,075	34,178
Wayne	225	30,732	147,329	203,098	512,076	180,076
Westmoreland	74	2,806	6,706	4,382	12,766	7,222
Wyoming	427	45,669	207,125	249,527	712,287	340,080
York	31	942	2,020	1,812	7,222	2,820
	606	47,203	156,420	207,398	568,873	292,644

TABLE 8: GENERAL STATISTICS FOR LAUNDRY, CLEANING AND DYEING ESTABLISHMENTS IN PENNSYLVANIA BY COUNTY: 1955  
(Money figures in thousands of dollars. Counties with fewer than three establishments are combined to insure confidentiality.)

County	Number of primary plants	Number of employees	Wages and salaries	Capital invested	Value of production
Total Pennsylvania	834	26,557	\$58,402.3	\$54,268.3	\$103,147.6
Adams	5	92	177.8	197.7	330.3
Allegheny	123	4,336	10,530.9	8,693.7	19,889.2
Armstrong	3	36	76.3	67.4	135.9
Beaver	19	228	407.1	579.7	227.5
Bedford	26	73	116.8	336.4	241.8
Berks	13	912	2,167.9	2,650.4	3,513.0
Blair	26	411	600.7	665.6	1,041.2
Bradford	5	59	99.8	92.5	186.4
Bucks	6	98	170.6	127.1	339.1
Butler	7	176	311.2	335.3	486.3
Cambria	6	525	903.3	1,066.2	1,712.6
Cameron-Potter	4	15	24.3	62.0	57.1
Carbon	4	16	27.7	97.9	70.1
Centre	5	103	178.3	285.0	327.6
Chester	6	248	626.2	320.5	337.7
Clarion-Venango	8	124	243.5	290.5	422.3
Clelland	11	116	192.8	227.7	361.5
Cleburn	3	115	247.9	88.5	419.1
Columbia-Montour	9	106	209.3	372.9	429.7
Crawford	9	95	150.2	380.9	323.8
Cumberland	10	163	365.4	365.1	662.1
Dauphin	28	826	1,801.7	1,993.4	3,161.6
Delaware	23	1,356	2,468.1	1,674.9	3,840.3
Elk	4	25	50.9	74.9	85.6
Erie	34	685	1,347.3	1,538.5	2,711.9
Fayette-Greene	14	380	571.3	457.7	976.3
Franklin	8	155	369.8	148.9	605.1
Huntingdon	6	61	92.3	162.2	181.6
Indiana	8	92	141.2	309.2	242.5
Jefferson	5	96	134.2	170.5	269.0
Lackawanna	21	745	1,410.6	1,282.8	2,629.1
Lancaster	18	275	617.4	964.2	1,115.6
Lawrence	6	160	216.0	278.4	398.5
Lebanon	7	260	484.1	336.9	781.7
Lehigh	23	933	2,023.7	1,878.3	3,375.3
Luzerne	26	1,140	1,933.4	1,963.2	3,862.8
Lycoming	12	261	515.5	559.0	862.8
McKean	16	81	146.1	256.4	286.2
Mercer	14	218	467.6	657.6	934.9
Mifflin	4	93	130.1	173.8	214.1
Monroe	3	119	206.8	219.7	415.7
Montgomery	23	716	1,756.0	1,248.9	2,918.5
Northampton	21	634	1,211.2	1,661.1	2,889.1
Northumberland	14	296	527.3	598.7	889.1
Perry-Snyder	3	55	123.0	148.7	226.7
Philadelphia	104	6,789	17,966.1	14,352.3	31,574.5
Schuylkill	18	194	312.5	425.2	547.5
Somerset	6	45	87.9	36.1	177.0
Susquehanna-Wayne	3	17	35.7	36.1	83.9
Tioga	5	27	70.2	93.4	74.1
Township	3	44	70.2	28.5	186.1
Warren	11	381	672.2	420.5	1,275.8
Washington	1	1	1.1	1.1	1.1



TABLE 9: INDUSTRIAL STATISTICS FOR URBAN PLACES IN PENNSYLVANIA: 1951

Establish- ments	No. of Employees	Wages and Salaries	Capital Invested	Value of Products	Value Added by Manu- facture
Alliquippa	19	11,570	\$59,735	\$161,663	\$246,045
Altoona	312	26,361	80,209	61,965	132,888
Ambridge	93	18,892	60,705	39,833	28,017
Beaver Falls	50	6,907	25,454	34,513	41,447
Berwick	40	5,568	16,496	13,181	26,089
Bethlehem	101	31,296	111,996	87,056	165,236
Bloomington	31	3,162	8,546	9,750	10,578
Bradock	23	7,355	27,205	88,741	54,771
Bradford	41	3,458	11,613	15,957	21,791
Bristol	37	7,966	29,748	35,484	54,486
Butler	53	6,873	27,774	43,491	38,816
Canonsburg	23	4,451	14,536	6,808	32,194
Carbonade	34	2,422	6,169	4,234	7,573
Carlisle	41	4,482	11,832	10,083	22,134
Carnegie	27	1,811	6,724	30,552	13,560
Chambersburg	48	3,948	10,281	14,326	16,540
Charlottesville	22	1,896	6,016	6,226	7,956
Chester	100	13,358	48,957	62,377	101,113
Clairton	14	7,346	29,067	109,826	64,097
Cleatfield	23	1,057	2,415	1,715	3,313
Coatesville	23	6,367	24,623	12,962	42,947
Columbia	43	2,972	8,151	5,850	17,049
Connellsville	34	1,439	3,650	3,140	3,778
Conshohocken	30	7,461	29,814	31,707	58,593
Coraopolis	12	2,872	12,656	7,177	20,268
Corry	23	2,591	8,795	7,064	17,260
Donora	16	5,202	23,178	7,274	33,750
DuBois	30	1,989	6,298	4,412	5,198
Dunmore	23	2,004	4,755	3,344	5,555
Duquesne	13	7,875	31,577	65,352	44,639
Easton	105	8,599	22,512	16,710	31,862
Elizabethtown	27	1,660	4,313	5,435	8,078
Ellwood City	31	5,459	22,148	8,129	41,856
Ephrata	37	2,562	5,929	3,884	9,582
Ette	313	43,154	161,636	6,311,250	326,234
Farrell	11	5,769	24,368	134,457	36,200
Franklin	22	3,988	14,150	7,127	27,630
Greensburg	50	3,725	11,429	6,042	21,588
Greenville	19	2,641	10,548	9,057	11,207
Grove City	19	3,243	12,404	6,405	14,442
Hanover	89	6,175	15,091	16,883	26,928
Harrisburg	186	13,883	43,060	40,406	58,567
Hazleton	85	6,724	15,214	12,015	20,084
Homesdale	19	380	1,397	1,285	2,358
Honesdale	27	1,923	3,584	1,967	6,394
Huntingdon	18	1,856	3,533	3,548	6,389
Jeanette	40	5,977	20,114	26,136	29,740
Johnstown	124	24,101	86,788	137,776	111,502
Kingsston	38	3,613	7,376	5,209	10,965
Lancaster	207	21,082	68,034	67,461	121,087
Lansdale	64	6,769	20,872	20,745	31,484
Latrobe	27	4,500	18,814	11,403	41,245
Lebanon	99	10,461	30,609	25,893	52,183
Lewistown	25	4,569	14,737	12,932	25,661
Lititz	31	1,498	4,123	3,974	8,288
Lock Haven	30	3,245	9,681	12,314	29,157
McKeesport	64	14,696	52,964	34,112	85,340
McKees Rocks	43	5,642	17,818	19,945	23,231
Meadville	34	5,654	20,766	31,552	42,277
Milton	25	2,265	7,003	6,235	17,755
Monessen	13	7,034	31,346	28,941	49,852
Monongahela	10	156	333	538	392
Mount Carmel	19	1,230	1,975	1,032	4,208
Nanticoke	22	1,530	2,962	2,072	5,404
New Castle	77	9,201	32,869	20,712	41,658
New Kensington	39	6,868	24,686	34,442	47,248
Northampton	22	2,261	5,492	11,450	20,651
Oil City	43	3,728	11,882	14,936	18,474
Philadelphia	5,309	356,242	1,169,994	1,157,071	2,090,321
Phoenixville	32	3,626	11,593	12,717	17,394
Pittsburgh	1,388	89,386	338,440	478,080	572,697
Pittston	27	1,802	2,814	1,000	3,625
Pottstown	75	12,587	48,208	45,892	95,954
Pottsville	44	3,362	7,160	3,512	13,621
Punxsutawney	29	894	2,468	2,137	2,086
Quakertown	49	2,882	6,546	5,239	9,634
Reading	345	28,998	86,432	74,551	134,877
Red Lion	43	2,612	6,343	5,697	11,002
Scranton	316	21,124	51,874	43,877	78,047
Shamokin	46	4,076	9,072	4,101	13,546
Sharon	39	9,918	43,085	18,721	104,229
Sharpsburg	27	1,099	3,973	6,928	6,868
Shenandoah	24	1,226	2,012	913	2,955
Steelton	18	6,421	24,711	20,556	43,090
Sunbury	32	3,809	9,658	4,238	23,338
Swissvale	16	3,896	15,693	3,990	23,977
Titusville	19	1,956	7,438	11,587	14,570
Tyronne	17	1,328	3,893	10,644	7,554
Uniontown	38	1,745	4,866	3,374	8,553
Warren	53	3,569	11,585	15,081	20,405
Washington	56	4,017	12,751	12,025	25,892
Waynesboro	32	4,322	14,867	11,944	28,006
West Chester	31	1,713	4,953	7,622	22,534
Wilkes-Barre	204	15,331	37,749	36,779	64,612
Williamsport	142	13,665	41,428	34,363	66,531
York	275	25,457	81,232	78,989	152,578

(Money figures in thousands of dollars)

TABLE 10: INDUSTRIAL STATISTICS FOR URBAN PLACES  
IN PENNSYLVANIA: 1952  
(Money figures in thousands of dollars)

Rank	City or Borough	Number of Establishments	Number of Employees	Wages and Salaries	Capital Invested	Value of Products
1	Philadelphia	5,249	359,126	\$1,234,866,800	\$1,224,011,300	\$4,780,802,500
2	Pittsburgh	1,359	88,937	348,399,300	516,984,400	1,240,900,900
3	Erie	300	40,085	156,613,300	121,997,800	549,046,900
4	Bethlehem	99	31,032	108,540,300	109,081,200	367,108,400
5	York	272	25,594	87,197,500	89,088,000	327,228,900
6	Allentown	306	26,269	82,490,500	64,643,200	333,298,800
7	Chester	94	15,374	51,813,400	62,989,700	305,415,300
8	Johnstown	118	22,573	83,189,500	154,910,000	281,567,600
9	Reading	335	27,694	85,165,600	78,713,600	269,483,600
10	Lancaster	194	20,584	71,208,400	68,451,300	254,451,000
11	Aliquippa	20	11,830	61,288,200	174,109,300	231,718,300
12	Bristol	38	12,367	41,811,400	48,249,300	203,823,900
13	Sharon	36	10,200	49,265,500	20,463,800	193,195,100
14	McKeesport	63	14,022	51,863,100	34,804,200	188,973,300
15	Pottstown	71	12,328	51,591,700	56,057,900	188,430,900
16	Clairton	12	7,126	27,556,000	119,734,400	179,543,500
17	Ambridge	16	11,034	44,887,100	57,467,500	179,460,600
18	Bradock	22	7,597	28,998,500	92,039,700	175,552,000
19	Seranton	312	19,773	52,717,700	44,404,700	162,583,200
20	Williamsport	138	14,317	46,047,000	34,190,000	159,850,900
21	Wilkes-Barre	198	16,467	41,551,300	35,026,400	155,614,600
22	Harrisburg	183	15,420	54,322,200	44,830,600	151,703,300
23	Duquesne	13	7,706	30,744,900	67,955,100	148,283,100
24	Altoona	54	7,154	30,744,900	44,029,200	133,620,400
25	Butte	92	15,419	51,841,400	41,749,400	130,649,300
26	Conshohocken	26	7,155	29,738,400	30,817,500	129,533,100
27	Berwick	39	5,851	18,392,400	13,209,500	129,034,100
28	Lebanon	100	10,582	31,072,600	26,125,500	116,427,400
29	Steelton	17	6,745	24,251,400	21,019,500	112,818,600
30	Farrell	11	5,958	22,284,200	29,851,700	110,822,200
31	Monessen	13	6,541	28,067,100	35,205,200	105,786,300
32	New Castle	47	6,717	26,192,500	35,669,400	90,330,800
33	Donora	75	8,282	31,300,900	21,089,600	87,998,700
34	New Kensington	15	5,084	20,774,300	7,506,600	85,634,800
35	Ellwood City	38	6,763	26,038,800	34,632,100	85,968,500
36	Coatesville	30	5,988	25,689,600	10,253,700	83,143,200
37	Washington	22	6,502	24,430,600	17,016,800	77,204,400
38	Sunbury	101	9,336	25,152,200	18,626,600	74,441,200
39	Washington	58	9,364	13,415,500	12,163,800	70,977,500
40	Lattrobe	25	4,488	11,706,000	4,231,500	70,889,300
41	Lansdale	59	8,123	23,520,600	13,989,000	68,248,400
42	Lock Haven	30	3,404	11,682,400	15,568,500	64,996,900
43	Meadville	33	4,014	20,108,900	13,774,500	63,280,600
44	Canonsburg	23	4,428	13,899,000	7,746,800	61,550,600
45	Franklin	23	3,839	13,716,700	7,332,800	59,426,100
46	Bradford	37	3,810	13,062,200	17,116,200	55,738,500
47	Hanover	90	6,002	15,039,000	17,981,200	55,507,900
48	Jeannette	38	5,467	19,487,700	21,882,700	54,488,300
49	McKees Rocks	40	5,442	17,037,900	19,648,800	52,664,000
50	Waynesboro	32	4,199	15,153,900	13,950,400	52,299,200
51	Norristown	73	4,091	13,552,000	14,722,900	49,947,400
52	Carlisle	41	4,874	13,840,200	9,378,300	49,338,400
53	Phoenixville	32	3,616	12,560,700	14,037,300	47,190,400
54	Warren	51	3,640	11,959,300	17,924,700	46,328,800
55	Coraopolis	13	3,044	13,216,700	9,712,600	46,143,200
56	Oil City	42	3,712	12,516,900	16,168,100	44,312,000
57	Greenville	22	2,469	10,510,300	9,479,400	42,389,700
58	Hazleton	17	4,186	17,425,700	4,922,200	41,441,200
59	Swissvale	81	6,455	15,167,300	12,214,700	41,214,700
60	Milton	26	3,768	7,038,900	6,472,000	38,907,100
61	Chambersburg	48	3,660	10,007,000	12,635,200	37,341,500
62	Titusville	19	2,196	8,620,200	11,928,200	36,896,400
63	Lewistown	25	4,068	13,135,200	14,016,300	34,334,700
64	West Chester	31	3,210	9,613,500	9,998,600	34,343,900
65	Grove City	30	1,777	5,556,000	10,220,800	32,532,700
66	Shamokin	19	3,109	12,995,900	5,111,500	32,019,300
67	Carnegie	26	1,805	7,476,900	7,443,700	32,019,300
68	Shamokin	46	3,912	8,034,000	4,278,000	29,239,900
69	Red Lion	42	2,985	8,237,800	5,637,300	27,796,200
70	Columbia	39	2,804	7,493,400	5,300,600	27,679,200
71	Shamokin	22	2,628	9,344,600	7,840,400	26,978,000
72	Corry	46	3,157	10,421,700	5,900,400	25,361,900
73	Greensburg					

TABLE 11: INDUSTRIAL STATISTICS FOR URBAN PLACES  
IN PENNSYLVANIA: 1952 1953  
(Money figures in thousands of dollars)

Rank	City or Borough	Number of Establishments	Number of Employees	Wages and Salaries	Capital Invested	Value of Products
1	Philadelphia	5,162	363,624	\$1,332,227,700	\$1,305,566,000	\$4,998,487,900
2	Pittsburgh	1,339	88,901	374,006,000	546,509,000	1,339,039,400
3	Erie	312	41,193	171,969,000	123,885,300	605,871,000
4	Bethlehem	99	32,440	126,391,800	114,185,800	470,526,600
5	Chester	91	15,805	70,546,100	70,939,500	379,239,500
6	Johnstown	119	23,748	96,357,800	146,741,900	370,657,600
7	York	273	28,159	102,288,300	95,554,100	362,865,900
8	Allentown	309	25,623	86,471,400	68,017,900	334,559,500
9	Reading	325	28,592	93,054,400	83,856,700	298,240,100
10	Lancaster	20	11,359	68,411,900	180,352,600	274,387,300
11	Aliquippa	194	21,688	78,958,700	72,648,000	265,160,000
12	McKeesport	63	14,840	63,129,700	47,746,000	242,510,100
13	Bristol	35	17,692	77,883,800	47,402,800	235,250,100
14	Bradock	19	7,611	33,388,600	97,859,300	224,327,700
15	Pottstown	71	11,080	52,872,900	60,058,800	216,024,400
16	Clairton	13	7,247	32,716,600	54,622,300	188,430,900
17	Ambridge	16	10,443	51,391,500	31,374,400	179,460,600
18	Sharon	33	13,200	55,846,100	61,261,000	192,397,100
19	Duquesne	12	7,521	33,196,300	71,719,200	186,207,800
20	Harrisburg	175	14,575	54,622,300	44,643,400	165,217,300
21	Seranton	306	19,932	55,148,600	43,877,400	162,434,600
22	Berwick	37	6,335	22,991,000	12,468,000	159,754,100
23	Williamsport	136	15,161	34,983,800	35,536,300	153,498,300
24	Wilkes-Barre	202	17,164	43,938,700	42,028,700	149,874,000
25	Altoona	89	15,913	56,384,700	29,198,300	143,092,700
26	Butte	13	6,016	29,198,300	27,598,600	140,402,800
27	Steelton	17	6,688	28,310,400	32,351,700	136,430,300
28	Conshohocken	28	7,666	33,375,100	43,142,300	139,430,300
29	Farrell	11	7,125	33,100,400	32,358,800	134,781,400
30	Beaver Falls	45	7,049	32,358,800	39,655,700	134,781,400
31	Lebanon	98	10,529	33,484,200	26,719,400	123,977,100
32	Monessen	13	6,231	29,145,000	14,958,800	115,940,700
33	Ellwood City	30	6,109	29,145,000	19,713,100	107,624,700
34	Coatesville	22	6,235	30,314,300	7,321,000	98,777,100
35	Donora	15	4,822	23,479,100	32,926,000	93,926,100
36	New Castle	79	8,035	32,229,800	22,568,000	84,931,000
37	New Kensington	39	7,395	30,485,100	36,879,600	84,931,000
38	Sunbury	32	4,323	12,800,400	4,496,200	83,145,200
39	Washington	100	9,911	28,614,200	22,585,200	81,585,200
40	Lansdale	58	8,569	27,386,800	22,584,300	77,427,900
41	Lattrobe	24	4,716	21,291,600	15,429,700	71,960,600
42	Washington	57	4,094	15,188,500	12,708,800	70,111,300
43	Canonsburg	21	5,093	17,767,600	6,964,000	66,457,800
44	Jeannette	38	6,303	24,379,000	16,741,300	66,457,800
45	Lock Haven	30	3,552	12,627,500	28,708,900	63,781,100
46	Meadville	34	5,676	22,524,800	18,550,500	59,001,900
47	Hanover	92	6,530	16,905,900	18,550,500	58,217,900
48	Franklin	21	3,561	13,222,800	7,486,700	57,862,100
49	Waynesboro	40	4,308	16,405,700	15,577,500	57,862,100
50	Carlisle	33	4,596	15,307,100	11,294,700	57,862,100
51	Bradford	39	3,968	13,760,000	18,737,600	57,862,100
52	Coraopolis	13	3,000	16,555,500	9,667,700	55,723,900
53	Oil City	40	3,603	13,601,300	17,113,600	54,423,400
54	McKees Rocks	43	5,021	17,224,600	20,217,700	54,144,700
55	Warren	51	3,625	13,776,100	17,065,300	53,127,400
56	Norristown	73	4,185	13,643,700	14,442,200	49,375,500
57	Phoenixville	22	3,772	13,265,900	16,530,000	48,314,500
58	Greenville	33	2,562	11,536,400	10,059,500	48,063,400
59	Hazleton	84	6,328	14,341,200	10,033,200	43,416,100
60	Swissvale	17	3,858	17,257,500	5,395,200	42,811,300
61	Milton	26	2,536	8,264,200	8,750,000	39,972,200
62	Titusville	17	2,223	9,293,100	12,848,900	38,958,100
63	Chambersburg	44	3,757	10,359,700	12,758,400	38,604,900
64	West Chester	28	2,137	6,549,600	10,376,400	38,404,300
65	Carnegie	22	1,884	7,717,600	8,216,400	37,104,300
66	Lewistown	25	4,000	13,223,000	13,616,800	36,532,400
67	Bloomburg	30	3,235	10,821,200	10,301,800	33,249,500
68	Red Lion	38	3,240	9,595,100	6,414,600	32,436,200
69	Columbia	37	2,794	7,843,800	5,362,700	29,867,300
70	Shamokin	19	2,930	12,038,700	4,435,800	27,127,700
71	Shamokin	47	3,637	8,111,100	3,574,800	27,125,000
72	Lititz	35	1,677	4,826,500	4,246,900	26,888,200



TABLE 12: INDUSTRIAL STATISTICS FOR URBAN PLACES IN PENNSYLVANIA: 1954

Municipality	Number of establishments	Number of employees	Wages and salaries	Capital invested	Value of products	Value added by manufacturing
Alliquippa	24	10,731	\$64,253	\$187,599	\$258,687	\$143,403
Alleentown	312	25,020	78,083	69,196	282,606	131,618
Altoona	89	10,214	36,318	44,213	93,813	27,359
Ambridge	17	10,576	50,100	62,711	208,543	90,118
Beaver Falls	50	6,335	27,188	41,385	100,973	41,864
Berwick	40	5,627	18,028	12,255	71,445	32,927
Bethlehem	94	27,740	101,195	120,149	325,733	169,042
Bloomsburg	31	3,434	10,586	10,324	35,850	14,664
Bradford	42	3,535	13,374	19,625	50,336	23,111
Bristol	34	12,065	67,457	48,750	197,559	128,629
Butler	56	6,296	27,724	43,227	102,548	41,162
Canonsburg	22	4,912	18,254	7,257	71,921	31,932
Carbondale	36	2,178	5,133	4,178	11,080	6,286
Carlisle	40	4,142	12,106	11,786	49,754	23,631
Carnegie	27	1,798	6,961	8,175	23,531	12,615
Chambersburg	49	3,659	9,445	13,023	36,215	15,218
Charlert	16	1,609	6,069	6,958	12,645	8,756
Chester	96	12,291	56,846	70,993	360,973	123,956
Chilton	14	6,501	29,146	155,270	170,812	65,770
Clearfield	25	1,365	3,451	2,506	7,817	4,552
Coatesville	24	5,909	27,857	20,415	82,829	39,053
Columbia	36	2,853	8,726	5,344	31,707	17,517
Connellsville	32	1,149	3,079	3,247	7,821	3,250
Conshohocken	31	6,659	29,397	41,373	107,126	52,309
Coraopolis	13	2,898	12,921	9,709	44,762	22,096
Corry	26	2,423	9,241	8,418	25,413	16,846
Donora	15	4,726	21,635	7,028	86,064	31,303
DuBois	28	948	2,987	4,416	11,593	3,360
Dunmore	21	1,923	4,438	4,898	12,767	5,507
Duquesne	11	5,192	22,183	72,314	119,679	40,361
Easton	98	8,301	25,547	23,630	70,134	35,481
Elizabethtown	27	1,820	4,911	5,228	71,324	33,263
Ellwood City	29	4,738	20,894	12,246	71,324	33,263
Ephrata	30	2,437	6,300	4,142	22,242	11,299
Farrell	14	4,889	20,677	34,203	77,619	29,687
Franklin	22	2,832	10,791	8,229	43,549	19,784
Greensburg	48	3,111	9,568	6,629	19,779	13,624
Greenville	22	1,957	8,305	10,489	29,797	7,714
Grove City	18	2,545	9,108	3,984	23,094	12,836
Hanover	91	5,925	15,785	19,676	54,396	27,304
Harrisburg	179	13,272	46,275	45,966	129,907	65,510
Hazleton	81	5,224	12,770	9,647	35,228	17,531
Homestead	17	336	1,378	1,063	3,289	1,988
Honesdale	27	1,858	4,681	2,326	19,384	10,787
Huntingdon	21	1,523	5,092	3,207	17,179	10,532
Jeanette	38	5,027	19,497	25,813	54,495	29,171
Johnstown	111	19,156	72,701	139,948	230,891	99,865
Kingston	42	3,080	7,086	7,148	23,893	14,102
Lancaster	190	17,234	66,034	71,215	228,617	117,174
Lansdale	59	7,835	24,977	25,032	70,409	42,911
Latrobe	23	4,333	18,028	16,881	59,511	35,023
Lebanon	99	9,657	29,669	28,073	101,208	45,333
Lewistown	27	4,103	12,647	14,130	32,397	17,381
Lititz	33	1,424	3,920	4,091	27,664	9,051
Lock Haven	28	3,419	12,388	16,111	60,382	30,774
McKeesport	66	12,098	39,189	39,189	197,892	71,812
McKees Rocks	41	4,309	14,945	21,060	40,903	19,099
Medaillie	38	5,279	20,145	30,759	58,279	32,012
Milton	28	2,419	7,648	8,861	38,310	19,341
Monessen	14	5,942	28,829	37,688	106,447	55,579
Monongahela	12	170	341	635	766	435
Mount Carmel	21	1,663	2,639	1,531	8,052	4,825
Nanticoke	24	1,437	2,483	1,440	7,868	5,249
New Castle	71	7,936	33,232	31,641	96,668	47,780
New Kensington	42	6,696	28,016	38,937	78,745	38,130
Northampton	73	4,030	13,104	14,270	40,180	21,503
Northampton	21	1,890	5,236	13,078	16,647	11,105
Oil City	36	3,122	11,058	14,668	43,293	18,644
Philadelphia	4,994	336,615	\$1,242,602	\$1,322,617	\$4,968,978	\$2,076,578
Phoenixville	32	3,922	13,199	13,683	41,410	21,056
Pittsburgh	1,354	79,100	329,221	695,436	1,114,662	507,910
Pittston	27	1,992	3,535	1,128	7,432	4,292
Pottstown	74	11,008	45,865	67,342	161,654	68,276
Pottsville	47	3,255	7,901	4,615	24,334	13,775
Punxsutawney	28	794	2,605	2,187	6,371	1,951
Quakertown	47	3,311	7,239	5,167	18,783	10,420
Reading	326	24,986	79,005	84,789	263,715	127,125
Red Lion	39	2,743	7,843	6,697	25,284	13,129
Seranton	304	19,738	52,442	42,286	157,718	77,961
Shamokin	47	3,256	7,886	3,891	25,223	12,471
Sharon	36	8,934	42,980	28,049	181,275	118,208
Sharpsburg	17	569	2,448	4,619	10,223	4,428
Shenandoah	21	1,311	2,305	970	4,946	3,241
Steelton	17	5,593	20,316	24,921	62,407	25,680
Sunbury	28	2,161	5,872	4,050	29,223	10,541
Swissvale	17	4,099	18,129	5,432	36,572	27,244
Titusville	18	1,897	7,735	14,091	27,968	17,160
Tyrone	15	1,326	4,233	11,458	15,012	8,758
Uniontown	41	1,807	4,938	5,055	15,294	7,476
Warren	50	3,351	12,655	17,115	50,875	22,038
Washington	56	3,663	13,942	13,306	62,651	25,072
West Chester	25	2,105	6,889	10,491	42,075	29,665
Wilkes-Barre	205	16,579	39,332	35,851	140,811	61,534
Williamsport	133	12,745	42,664	35,897	131,139	64,532
York	273	25,621	93,143	93,907	355,296	163,676

(Money figures in thousands of dollars)

TABLE 13: INDUSTRIAL STATISTICS FOR URBAN PLACES IN PENNSYLVANIA: 1955

(Money figures in thousands of dollars. Laundries, cleaning, and dyeing establishments are not included.)

Municipality	Number of plants	Number of employees	Total wages and salaries	Capital invested	Value of production	Value added by manu- facture <sup>(1)</sup>
Aliquippa	18	14,440	\$75,811	\$198,418	\$305,481	\$167,599
Allentown	301	26,966	91,719	72,566	366,180	152,520
Altoona	80	14,291	48,087	45,901	148,753	53,014
Ambridge	16	10,443	51,943	63,330	221,495	99,008
Beaver Falls	46	7,004	32,860	43,291	133,077	49,279
Berwick	40	5,364	20,537	12,193	102,457	39,655
Bethlehem	89	28,239	118,827	114,350	420,842	215,775
Bloomsburg	31	3,822	10,767	10,754	41,722	14,991
Braddock	20	6,690	32,142	104,870	189,731	57,494
Bradford	37	3,649	14,118	21,351	60,392	31,177
Bristol	33	10,174	51,493	49,452	183,763	110,196
Butler	53	6,809	34,455	39,031	130,535	50,488
Canonsburg	18	4,613	18,231	7,502	64,561	29,190
Carbondale	36	2,263	5,014	4,888	11,655	6,414
Carlisle	39	4,159	13,539	13,682	65,010	29,812
Carnegie	23	1,673	7,309	8,387	30,907	15,097
Chambersburg	45	3,701	10,182	14,296	38,418	15,308
Charleroi	15	1,428	5,694	6,837	13,658	8,699
Chester	93	11,423	54,771	74,499	384,540	134,231
Clairton	12	6,804	35,455	176,194	227,366	100,471
Clearfield	20	1,320	3,634	2,595	8,502	4,808
Coatesville	23	5,960	30,701	19,427	100,058	43,254
Columbia	34	3,162	8,929	5,577	39,886	19,925
Connellsville	27	1,053	3,088	2,869	8,477	3,579
Conshohocken	32	6,844	34,083	39,725	137,676	61,072
Coraopolis	14	3,178	16,185	12,211	53,410	24,996
Corry	22	2,534	10,445	9,837	27,915	16,832
Donora	15	4,752	26,656	8,126	95,444	41,383
DuBois	22	1,485	5,744	4,128	17,820	4,595
Dunmore	20	1,814	3,647	4,716	10,672	4,719
Duquesne	11	5,982	30,143	74,508	172,022	72,678
Easton	91	9,186	28,811	25,443	82,315	42,760
Elizabethtown	25	1,661	5,018	5,272	26,481	9,250
Ellwood City	26	5,260	26,351	11,685	84,186	40,663
Ephrata	26	2,765	7,704	4,296	27,234	12,976
Erie	305	32,328	141,106	125,416	488,271	251,513
Farrell	11	5,885	31,406	36,342	142,171	49,591
Franklin	22	3,315	13,526	11,024	58,483	27,299
Greensburg	42	2,914	11,573	6,272	24,795	17,200
Greenville	14	1,950	9,051	9,843	39,638	9,952
Grove City	16	2,617	11,276	4,098	29,693	17,102
Hanover	86	6,220	17,070	20,558	62,377	31,087
Harrisburg	158	12,136	47,075	47,088	141,852	65,599
Hazleton	81	5,624	13,885	8,865	42,252	21,619
Homestead	19	1,321	6,899	6,245	28,687	12,789
Honesdale	26	2,031	5,048	2,717	19,691	10,338
Huntingdon	18	1,665	5,596	3,415	17,818	10,632
Jeanette	37	5,899	25,632	26,630	64,427	34,630
Johnstown	102	21,487	94,694	145,292	338,190	144,210
Kingston	39	3,013	7,179	7,472	24,130	12,948
Lancaster	191	20,478	82,996	89,915	283,389	150,211
Lansdale	57	8,445	28,320	27,646	77,771	48,489
Latrobe	24	4,577	20,560	20,147	71,942	44,591
Lebanon	99	9,901	31,401	28,779	117,137	49,910
Lewistown	24	3,821	13,494	14,352	39,371	20,436
Littitz	29	1,344	4,156	3,995	26,609	7,824
Lock Haven	26	3,612	13,480	16,545	68,666	36,376
McKeesport	57	11,815	55,536	40,687	226,212	93,312
McKees Rocks	41	4,425	16,322	22,212	49,093	23,410
Meadville	29	5,831	21,963	30,122	62,756	32,936
Milton	25	2,553	8,619	10,071	51,155	25,245
Monessen	12	6,240	36,529	38,063	131,441	62,793
Monongahela	10	184	402	995	980	636
Mount Carmel	19	1,633	3,174	1,636	10,006	6,004
Nanticoke	24	1,616	3,015	1,093	11,009	7,176
New Castle	64	6,646	27,762	30,132	88,546	42,412
New Kensington	39	6,834	30,903	39,578	103,642	51,320
Norristown	64	3,500	12,100	15,114	38,246	20,533
Northampton	20	2,125	5,587	13,622	19,895	13,941
Oil City	31	2,898	11,289	12,894	43,289	19,952
Philadelphia	4,670	323,625	1,262,548	1,324,743	5,003,146	2,221,272
Phoenixville	32	4,033	16,249	14,811	51,057	24,801
Pittsburgh	1,217	77,821	345,238	555,126	1,246,048	593,582
Pittston	27	2,388	3,796	1,265	8,642	4,900
Pottstown	70	11,491	52,299	68,669	250,371	129,627
Pottsville	43	3,401	8,760	4,643	25,047	14,185
Punxsutawney	25	686	2,170	2,138	5,998	1,817
Quakertown	43	3,513	7,882	5,385	21,247	13,184
Reading	302	26,227	92,093	89,131	339,506	162,938
Red Lion	37	2,538	7,185	6,471	23,455	11,760
Scranton	297	21,685	58,623	70,484	181,253	89,530
Shamokin	40	3,305	7,539	3,830	23,350	11,412
Sharon	30	9,455	44,371	29,470	162,543	98,432
Sharpsburg	19	1,331	4,851	6,357	17,282	7,459
Shenandoah	18	1,328	2,344	903	5,016	3,276
Steelton	16	5,869	26,182	26,661	135,426	60,207
Sunbury	26	1,667	4,562	3,442	14,612	7,232
Swissvale	16	3,883	18,371	5,176	40,261	29,358
Titusville	14	2,188	9,779	14,584	33,142	18,532
Tyrone	11	1,466	4,820	12,263	16,588	9,795
Uniontown	37	2,031	5,873	4,700	21,753	11,415
Warren	47	3,463	13,121	17,888	50,133	21,105
Washington	50	3,607	15,155	13,026	80,432	30,975
Waynesboro	27	4,132	15,679	18,587	46,596	30,335
West Chester	24	2,098	7,009	8,279	46,367	33,756
Wilkes-Barre	199	16,048	41,894	32,012	155,463	69,888
Wilkinsburg	34	565	1,924	2,004	5,496	2,863
Williamsport	123	13,525	43,829	37,545	135,148	62,856
York	251	24,316	92,747	102,519	331,747	165,049

<sup>(1)</sup> Computed for manufacturing and all mining except bituminous and anthracite coal.

TABLE 14: GENERAL STATISTICS FOR LAUNDRY, CLEANING, AND DYEING ESTABLISHMENTS FOR  
URBAN PLACES IN PENNSYLVANIA: 1955  
(Money figures in thousands of dollars)

Urban place	Number of plants	Number of employees	Wages and salaries	Capital invested	Value of production	Urban place	Number of plants	Number of employees	Wages and salaries	Capital invested	Value of production
Aliquippa	4	39	\$153.3	\$171.5	\$248.4	Lebanon	5	115	\$243.5	\$223.1	\$410.4
Allentown	17	764	1,784.5	1,647.3	2,599.8	Lewistown	3	73	93.9	133.0	160.6
Altoona	8	276	386.6	375.6	666.8	McKeesport	7	129	248.5	216.1	441.8
Beaver Falls	5	49	88.6	143.7	146.8	Meadville	5	64	93.0	267.7	182.5
Berwick	3	29	43.2	54.0	79.7	Milton	3	38	85.1	97.0	173.7
Bethlehem	6	207	378.2	274.4	666.7	New Castle	4	128	163.4	181.5	300.6
Bradford	7	55	97.8	164.0	194.6	Norristown	5	214	557.1	214.1	898.9
Butler	6	160	285.6	314.0	442.3	Oil City	5	88	170.4	164.8	291.3
Chambersburg	4	85	226.3	401.7	366.6	Pittsburgh	85	3,583	8,844.3	7,081.8	16,802.0
Chester	4	366	543.5	271.8	812.4	Pottsville	4	58	110.0	116.2	176.7
Clearfield	3	45	72.4	74.7	152.7	Punxsutawney	3	24	38.4	40.5	60.9
Columbia	3	19	43.3	68.0	96.2	Reading	18	804	1,902.5	2,014.1	3,045.4
Connellsville	3	69	121.6	102.0	188.6	Scranton	14	523	1,010.8	926.4	1,904.0
DuBois	5	49	89.6	88.0	153.5	Shamokin	4	68	81.7	163.0	144.8
Easton	10	457	852.1	1,279.9	1,363.0	Sharon	5	102	240.4	223.1	435.0
Erie	26	628	1,265.9	1,342.1	2,509.3	Titusville	3	29	55.7	95.4	126.2
Farrell	4	23	40.9	73.2	105.4	Uniontown	3	75	137.2	158.6	201.8
Greensburg	4	90	162.1	117.5	265.3	Warren	3	44	70.2	58.5	186.1
Greenville	3	56	112.6	225.0	232.2	Washington	6	190	352.1	247.2	746.3
Hanover	6	128	341.3	397.2	524.2	Waynesboro	3	64	129.5	119.2	211.7
Harrisburg	20	650	1,420.9	1,498.0	2,454.3	Wilkes-Barre	11	656	1,053.2	963.0	2,048.9
Hazleton	4	214	390.3	482.2	568.0	Wilkesburg	3	31	89.6	81.2	171.1
Huntingdon	3	36	53.4	84.2	107.9	Williamsport	9	230	456.7	458.3	745.4
Jeannette	4	143	244.5	154.9	384.1	York	20	476	1,107.0	1,180.2	1,919.2
Johnstown	4	306	606.8	1,008.5	1,184.0	All other places <sup>(1)</sup>	57	1,618	3,334.9	2,820.2	5,634.4
Lancaster	7	140	288.0	563.3	504.4						
Latrobe	3	60	98.3	27.7	144.6						

(1) Includes establishments in the following urban places: Ambbridge - 2; Bloomsburg - 1; Braddock - 1; Canonsburg - 2; Carbondale - 2;

Carlisle - 1; Carnegie - 1; Charleroi - 1; Coatesville - 1; Coraopolis - 1; Corry - 2; Donora - 1; Dunmore - 2; Elizabethtown - 2; Elwood City - 2; Grove City - 2; Homestead - 1; Honesdale - 1; Kingston - 2; Lansdale - 2; Lock Haven - 2; McKees Rocks - 1; Monessen - 2; Monongahela - 2; Mount Carmel - 2; New Kensington - 2; Northampton - 2; Pottstown - 2; Quakertown - 2; Red Lion - 1; Shenandoah - 2; Steelton - 1; Sunbury - 2; Swissvale - 1; Tyrone - 2 and West Chester - 1.



## 1955 INDUSTRIAL PRODUCTION REPORT

### EXPLANATION AND INSTRUCTIONS

1. A separate Report must be made for each plant. 2. If impossible to give exact figures, make a careful estimate and mark "E" to indicate that it is an estimate. 3. DO NOT OMIT ANY ITEMS IN THE REPORT. 4. FILL IN BOTH TABLE No. 1 AND TABLE No. 2.

Capital Invested .....\$ ..... Days in operation .....  
(Capital invested should represent amount of money actually invested in plant and equipment. Include value of land used in connection with plant. Do not include value of capital stock.)

Total No. of electric motors .....; H.P. .... Rated horsepower of prime movers .....  
(Include all electric motors.) (Report horsepower of steam engines, oil and gasoline engines and turbines.)  
 Rated horsepower of motors driven by purchased current ..... Total primary horsepower .....  
(Do not include motors driven by current generated in plant.) (Sum of two preceding items.)

WAGE EARNERS SEX AND WAGES PAID AVERAGE NUMBER EMPLOYED IN 1955 <small>(Include Minors but not Salaried Persons and Office Force)</small>		SALARIED PERSONS AND OFFICE FORCE AVERAGE NUMBER EMPLOYED IN 1955 PROPRIETORS AND OFFICIALS	
Males	Total Wages \$	Males	Total Salaries \$
Females	Total Wages \$	Females	Total Salaries \$
Total	Grand Total \$	CLERKS AND OTHER OFFICE FORCE	
		Males	Total Salaries \$
		Females	Total Salaries \$
MINORS SEX AND WAGES PAID AVERAGE NUMBER EMPLOYED IN 1955 <small>(Do Not Include Office Force)</small>		TOTAL SALARIED PERSONS AND OFFICE FORCE	
Males under 18	Total Wages \$	Males	Total Salaries \$
Females under 18	Total Wages \$	Females	Total Salaries \$
Total	Grand Total \$	Total	Total Salaries \$

(Salaried persons and office force include proprietors, partners, officers, superintendents, managers, salesmen, clerks, bookkeepers, stenographers, and any other office workers. Do not include these in any other table.)

### WAGE EARNERS AND SALARIED PERSONS IN 1955

Total Number Employed ..... Total Wages and Salaries \$ .....

### TABLE No. 1. PRODUCTION

1. For manufacturing establishments, specify each particular product made, giving total quantity produced, unit of production\* and total market value of each product.
2. For industrial establishments, not manufacturing, give brief statement of the exact nature of your business, with volume of business expressed in dollars.
3. If engaged in manufacturing under contract, give total quantity produced and show contract price received for your portion of the work.

(\* UNIT CODE:—Barrels, dozens, gallons, ounces, pounds, pairs, sq. yards, thousands, tons, units.)

Name of each product or nature of business	Total quantity produced	Unit of production*	Market Value	
			\$ .....	(Do not write in this space)
A. Total value of all products ..... (Sum of Above) \$ .....				
Cost of materials, supplies and containers ..... (Do not include wages, salaries or any overhead expenses)			\$ .....	
Cost of fuel .....				
Cost of purchased electric energy .....				
Cost of contract work done for you by others .....				
B. Total cost of materials, fuel, etc. .... (Sum of Above)			\$ .....	
C. Value added by manufacture ..... (Subtract B from A)			\$ .....	

APPENDIX A - COPY OF THE REPORT FORM USED FOR THE 1951 THROUGH 1955  
INDUSTRIAL CENSUS FOR ANTHRACITE AND BITUMINOUS COAL PRODUCERS

1955 COAL PRODUCTION REPORT

**EXPLANATION AND INSTRUCTIONS** 1. A separate Report must be made for each county. 2. If impossible to give exact figures, make a careful estimate and mark "E" to indicate that it is an estimate. 3. DO NOT OMIT ANY ITEMS IN THE REPORT.

Capital Invested .....	\$ .....	Days in operation .....
(Capital Invested should represent amount actually invested in mines and equipment. Do not include value of capital stock.)		
Total No. of electric motors .....	H. P. ....	Rated horsepower of prime movers .....
(Include all electric motors.)		(Report horsepower of steam engines, oil and gasoline engines and turbines.)
Rated horsepower of motors driven by purchased current .....	.....	Total primary horsepower .....
(Do not include motors driven by current generated in plant.)		(Sum of two preceding items.)

**WAGE EARNERS  
SEX AND WAGES PAID**

AVERAGE NUMBER EMPLOYED IN 1955  
(Include Minors but not Salaried Persons and Office Force)

Males	Total Wages \$	
Females	Total Wages \$	
Total	Grand Total \$	

**MINORS**

**SEX AND WAGES PAID**

AVERAGE NUMBER EMPLOYED IN 1955  
(Do not include Office Force)

Males under 18	Total Wages \$	
Females under 18	Total Wages \$	
Total	Grand Total \$	

(Salaried persons and office force include proprietors, partners, officers, superintendents, managers, salesmen, clerks, bookkeepers, stenographers and any other office workers. Do not include these in any other table.)

**SALARIED PERSONS  
AND OFFICE FORCE**

AVERAGE NUMBER EMPLOYED IN 1955  
PROPRIETORS AND OFFICIALS

Males	Total Salaries \$	
Females	Total Salaries \$	

**CLERKS AND OTHER OFFICE FORCE**

Males	Total Salaries \$	
Females	Total Salaries \$	

**TOTAL SALARIED PERSONS AND OFFICE FORCE**

Males	Total Salaries \$	
Females	Total Salaries \$	
Total	Grand Total \$	

**WAGE EARNERS AND SALARIED PERSONS IN 1955**

Total Number Employed ..... Total Wages and Salaries \$ .....

TABLE No. 1. PRODUCTION

Product	Total Production Net Tons	Value of Product
Anthracite Coal—Freshly Mined		\$ (At Mines)
Anthracite Coal—Washery		\$ (At Washery)
Bituminous Coal		\$ (At Mines)





INDUSTRIAL STATISTICS FOR  
PENNSYLVANIA : 1916 to 1956

DEPARTMENT OF  
INTERNAL AFFAIRS  
Genevieve Blatt, Secretary

BUREAU OF STATISTICS  
Kenneth Masters, Director  
Elmer Larson, Asst. Director

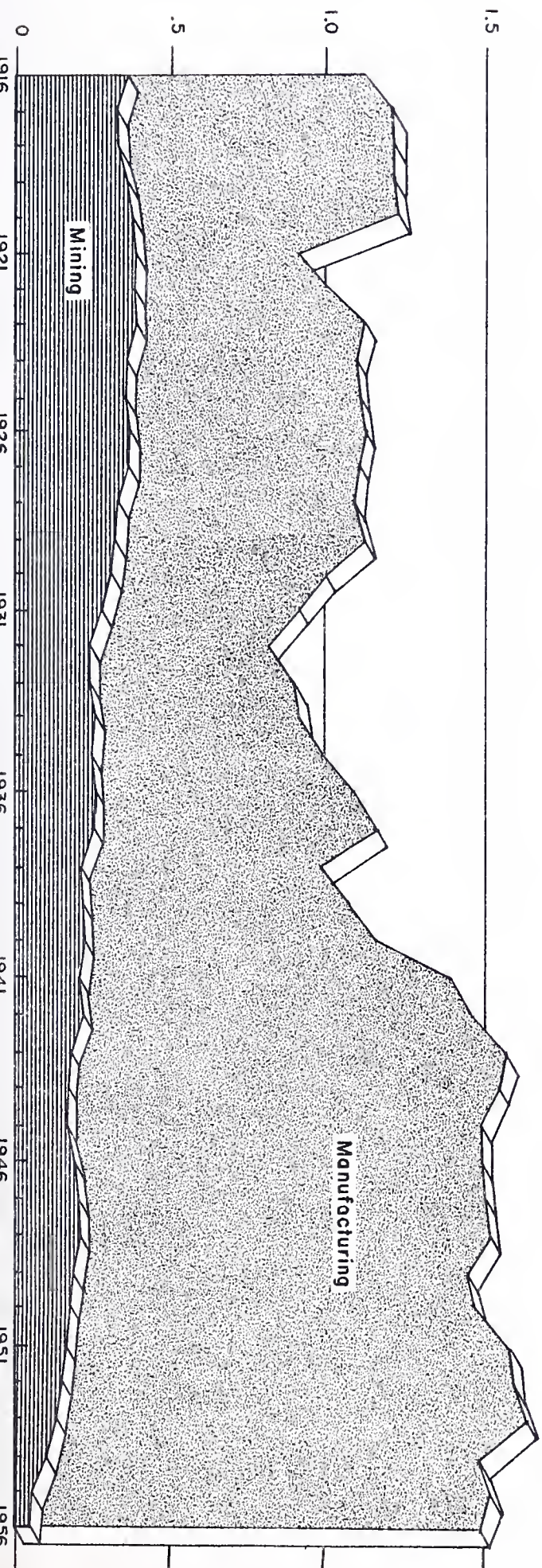
MARCH 1959

SPECIAL RELEASE S-3

EMPLOYEES FOR MANUFACTURING AND MINERAL INDUSTRIES : 1916 to 1956

2.0

( Figures in Millions )






## INDUSTRIAL STATISTICS FOR PENNSYLVANIA, 1916 TO 1956

### FOREWORD

At the time when the Bureau of Statistics was created as an independent agency by an Act of the Pennsylvania Legislature in 1872, only one other state, Massachusetts, had a state statistical bureau. Two years later when the Bureau of Statistics was established in the newly created Department of Internal Affairs by the Constitution of 1874, it was the only statistical bureau to be given Constitutional status. During the 87 years of its existence the Bureau has played a unique role among state statistical agencies.

This publication is the first release by the Department of a long term historical series for industrial statistics. In addition, it is the first attempt by the Department to present explanatory notes for such an historical time series. It is our hope that our efforts will be successful in breathing life into what otherwise might become dead and dusty volumes of statistics.

  
Genevieve Blatt  
Secretary of Internal Affairs





# INDUSTRIAL STATISTICS FOR PENNSYLVANIA, 1916 TO 1956

	Page
Introduction and Explanatory Notes .....	i
Table 1 Number of Industrial Establishments by Major Industry Group: 1916 to 1956 .....	1
Table 2 Employment by Major Industry Group: 1916 to 1956.....	2
Table 3 Horsepower by Major Industry Group: 1928 to 1954 .....	3
Table 4 Wages and Salaries by Major Industry Group: 1916 to 1956.....	4
Table 5 Value of Production by Major Industry Group: 1916 to 1956 .....	5
Table 6 Value added by Manufacture by Major Industry Group: 1940 to 1956.....	6
Appendix A List of Productive Industry Reports .....	7
Appendix B Copies of the Industrial Report Forms used in 1915, 1926, 1955, and 1956 .....	8
Appendix C Statistics for Nonmanufacturing Plants Excluded in the 1956 Industrial Census .....	12
Appendix D Establishments and Employment in SIC Industry Groups by DLA Industry Groups, 1956...	13



## INDUSTRIAL STATISTICS FOR PENNSYLVANIA: 1916 TO 1956

### A. INTRODUCTION:

The purpose of this report is to present summary data for the industrial censuses taken by the Bureau of Statistics for the years 1916 through 1956.

The Bureau of Statistics was created as an independent agency by an Act of the Pennsylvania Legislature in 1872 and was established in the Department of Internal Affairs by the Constitution of 1874. Although industrial surveys were conducted by the Bureau of Statistics during the first 41 years of its existence, it was not until 1913 when the Bureau was transferred to the newly created Department of Labor and Industry that the first attempt to conduct a complete industrial census was made. Approximately 13,000 establishments were included in the 1913 census.

In 1919 the Bureau of Statistics was transferred back to the Department of Internal Affairs. Industrial statistics for 1916, 1917, 1918, and 1919 were published in 1920 in the Report on the Productive Industries of the Commonwealth of Pennsylvania. A list of the 18 volumes of the Productive Industries Reports published between 1920 and 1952 is presented in Appendix A of this release.

The return of report forms is required by law with penalty for failure to submit information within 30 days. The Act of April 20, 1921, P. L. 193 specifies a fine of \$200; the Acts of 1913 and 1919 specified penalties of \$100.

### B. REPORT FORMS USED BY THE BUREAU OF STATISTICS:

Copies of the report forms used in 1915, 1926, 1955, and 1956 are shown in Appendix B.

### C. EXPLANATION OF TERMS:

1. An industrial establishment for purposes of this report is defined as a single physical location performing the following types of operations: manufacturing; mining or quarrying; railroad repair; or laundry work, cleaning, or dyeing. A nonmanufacturing establishment with subsidiary manufacturing operations is considered an industrial establishment, but only that portion of employment, wages and salaries, and value of production associated with manufacturing operations has been included in the statistical tabulations. In 1956 laundries, railroad repair establishments, and non-manufacturing plants with subsidiary manufacturing operations were excluded from the Industrial Census. Data for nonmanufacturing plants excluded in the 1956 Industrial Census are shown in Appendix C.

2. Number of employees was defined as the "average number employed". Separate figures for "wage earners" were combined with "salaried persons and office force including proprietors, partners, officers, superintendents, managers, salesmen, clerks, bookkeepers, stenographers, and any other office workers".

In 1956, number of employees was defined to include all production and related workers, and all nonproduction personnel including force-account construction employees on the payroll engaged in construction of major additions or alterations to the plant. Officers of corporations are included; proprietors or partners of unincorporated concerns are not included. The 1956 employment figures are an average of the number of employees who worked or received pay for the pay periods ending the nearest 15th of March, May, August, and November.

3. Wages and salaries was specified as the total wages and salaries for

the employees defined above.

In 1956, wages and salaries were defined to include all forms of compensation including salaries, wages, commissions, bonuses, vacation pay, and other remuneration before deductions for Social Security, income tax, group insurance, and union dues.

4. Value of production was defined as the total market value or contract price received.

In 1956, value of production and related activities was defined to represent the net sales value of products shipped plus or minus the value of any inventory increases or decreases. Sales values are f.o.b. plant after discounts and allowances, and not including freight charges or excise taxes. The value of contract work and miscellaneous receipts for repair work, and installation of own products, are included as are the sales of products bought and resold without further manufacture minus the cost of such products. The value of secondary production of ready-mix concrete is also included in miscellaneous receipts.

In 1956, value of mineral production and related activities included the value of production plus or minus the value of inventory change of crude minerals and concentrates, whether produced from ore mined by the establishment or received from other plants owned by the same company. Products are valued at net selling price f.o.b. plant after discounts and allowances.

5. Value added by manufacture is the value of production minus the cost of materials, supplies, and containers; cost of fuel; cost of purchased electric energy; and the cost of contract work done by others. Value added avoids the duplication in value of production resulting from the use of products of some establishment as partly finished materials or component parts by others. In the years before 1956 value added for mining was not computed for producers of anthracite, bituminous coal, iron ore, and sand and gravel; for railroad repair establishments; or for laundry, cleaning, and dyeing establishments.

In 1956, value added for mining was computed for all mineral establishments. Value added by mining consists of the value of mineral production and related activities minus the costs of supplies used, crude ore purchased, fuel consumed, purchased electric energy, and contract work done by other establishments (such as hauling, pumping, tunneling, shaft sinking, boring test holes, repair work, and construction.)

### D. COMPARABILITY WITH OTHER STATISTICAL SERIES:

Because of the unique system of industrial classifications employed by the Bureau of Statistics for the tabulations before 1956, comparability with other statistical series is limited. Classifications were originally based on the 1909 Census of Manufacturers taken by the U.S. Bureau of the Census but with the following types of establishments excluded:

1. Establishments doing work exclusively for individual customers such as custom tailoring, dressmaking, millinery, and shoemaking.

2. Establishments engaged in neighborhood industries and hand trades such as blacksmithing, harness-making, and tinsmithing.

The major industrial classifications used in the 1916 industrial census set the pattern for the classifications used in subsequent Department of Internal Affairs censuses--ten major manufacturing groups, a mines and quarries division, and a railroad repair division.



Overall comparisons for number of reporting manufacturing establishments and employment for the Bureau of the Census (BC) statistics and the Department of Internal Affairs (DIA) censuses are shown below:

Year	No. of establishments		Employment (in thousands)	
	BC	DIA	BC	DIA
1914	27,521	16,747	1,061	982
1919	26,614	15,151	1,290	1,123
1921	20,290	18,765	(NA)	959
1923	19,054	15,674	(NA)	1,134
1925	17,298	14,585	(NA)	1,080
1927	17,314	17,038	(NA)	1,088
1929	16,947	16,502	1,155	1,118
1931	14,774	16,991	(NA)	902
1933	12,093	16,402	(NA)	860
1935	12,926	15,998	920	975
1937	13,084	15,896	1,077	1,151
1939	13,116	15,270	1,016	1,063
1947	16,794	16,679	1,412	1,517
1949	(NA)	18,007	1,348	1,440
1950	(NA)	17,427	1,421	1,483
1951	(NA)	18,623	1,485	1,575
1952	(NA)	18,420	1,500	1,590
1953	(NA)	18,317	1,549	1,633
1954	18,795	17,838	1,422	1,477

Differences between the Industrial Censuses and the Censuses of Manufactures can be attributed to differences in scope and completeness of coverage, and to differences in definitions used.

Under-coverage for the 1914 Industrial Census is primary for small manufacturing establishments. In the 1925 volume of the Productive Industries Report, the Director of the Bureau of Statistics attributes the decreases in the number of reporting establishments between 1921 and 1924 to an inadequate field force. In 1927 the Bureau was reorganized and in 1928 an "extensive field survey covering every county in the state" was conducted which increased the coverage of the census by "several thousand" establishments.

Comparisons for 1956 between the Industrial Censuses and the Censuses of Manufactures are shown in the explanatory notes for the releases based on the 1957 Industrial Census.

The data collected in the 1956 Industrial Census are in general comparable with statistics collected by the Bureau of the Census with the following exceptions: 1. The Bureau of Statistics has not attempted to collect separate reports for manufacturers' central administrative offices and auxiliary units. Only subsidiary administrative, storage, or research operations for reporting manufacturing establishments have been included in the census results. 2. Establishments engaged in the sole production of fluid milk and cream (SIC code 2077) are not included in the census although producers of fluid milk together with cream and other dairy products are included. All manufacturers of fluid milk and cream will be included in the 1957 Industrial Census of Pennsylvania. 3. Logging camps and contractors (SIC code 2411) are not included in the 1956 Industrial Census. 4. The crude petroleum and natural gas extraction industry has not been included in the Census of Mineral Industries although classified in the Mining division in the Standard Industrial Classification. Statistics on natural gas production and distribution are

sylvania; statistics on crude oil production are collected in the Bureau's Census of Petroleum Pipe Lines in Pennsylvania. 5. Statistics on "value of production and related activities" and "value added by manufacture" include miscellaneous receipts as explained in Part C. "Value added by mining" does not include capital expenditures for plant, equipment, and the development and exploration of mineral properties.

# E. COMPARABILITY AMONG THE INDUSTRIAL CENSUSES TAKEN BY THE BUREAU OF STATISTICS:

In order to maximize the comparability of the annual census statistics, data for shoe repair shops have been excluded from the leather and rubber products industry in 1927, 1928, and 1929 (the only years in which such statistics were collected). In addition, statistics for laundries, dry cleaning, and dyeing establishments have been shown separately. Statistics for nonmanufacturing establishments excluded in the 1956 Industrial Census are shown in Appendix C.

The relationship between the Standard Industrial Classification and the Department of Internal Affairs industrial classification used before 1956 is presented in the two tables included in Appendix D.

TABLE 1: NUMBER OF INDUSTRIAL ESTABLISHMENTS BY MAJOR INDUSTRY GROUP: 1916 TO 1956

(Industry groups are as follows: 1. Chemicals and allied products, 2. Clay, glass, and stone products, 3. Food and kindred products, 4. Leather and rubber products, 5. Lumber and wood products, 6. Metal and metal products, 7. Paper and printing industries, 8. Textile and textile products, 9. Tobacco manufactures, 10. Miscellaneous manufactures.)

Year	Number of establishments by major industry group														
	All industries	Total manufacturers	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(a) (10) Laundries	Rail- road repair	Mining	
1916	17,069	15,559	773	901	3,270	419	1,302	3,041	1,433	2,330	893	1,197	322	N.A.	1,188
1917	18,242	16,263	751	871	3,143	410	1,273	3,349	1,858	2,606	791	1,211	310	235	1,434
1918	17,536	15,414	734	802	3,010	416	1,159	3,230	1,763	2,343	734	1,223	285	241	1,596
1919	16,988	15,151	768	583	2,857	395	1,114	3,432	1,740	2,422	709	1,131	273	N.A.	1,564
1920	21,227	18,836	910	634	4,166	526	1,230	4,089	1,849	2,731	1,425	1,276	459	N.A.	1,932
1921	21,090	18,765	749	613	3,966	520	1,222	4,434	1,870	2,714	1,468	1,209	473	N.A.	1,852
1922	19,181	16,008	753	647	3,563	473	1,200	2,887	1,904	2,542	1,235	804	483	306	2,384
1923	18,701	15,674	748	672	3,448	430	1,203	2,864	1,905	2,474	1,103	827	465	291	2,271
1924	17,662	15,067	750	676	3,272	398	1,167	2,776	1,859	2,419	970	780	466	309	1,820
1925	17,127	14,585	746	668	3,152	369	1,175	2,687	1,822	2,341	856	769	458	312	1,772
1926	17,041	14,476	743	671	3,391	342	1,114	2,630	1,818	2,233	763	771	451	309	1,805
1927	19,756	17,038	782	769	4,245	369	1,340	2,771	2,031	3,252	634	845	554	299	1,865
1928	18,938	16,454	760	750	4,099	349	1,294	2,672	1,971	3,331	564	664	512	298	1,674
1929	18,890	16,502	743	720	4,080	341	1,204	2,612	2,269	3,387	491	655	503	298	1,587
1930	20,350	17,855	802	819	4,625	355	1,369	2,842	2,367	3,445	479	752	620	285	1,590
1931	19,393	16,991	757	741	4,522	333	1,269	2,708	2,321	3,214	415	711	607	285	1,510
1932	18,277	16,077	753	627	4,207	318	1,177	2,591	2,304	2,987	376	737	568	263	1,369
1933	18,618	16,402	759	622	4,281	315	1,163	2,676	2,370	3,094	358	764	575	250	1,391
1934	18,204	16,053	755	601	4,166	302	1,129	2,640	2,336	3,036	340	748	558	248	1,345
1935	18,128	15,998	747	614	4,188	304	1,154	2,637	2,337	2,947	320	750	561	244	1,325
1936	17,994	15,912	759	620	4,134	312	1,154	2,635	2,319	2,893	303	783	553	237	1,292
1937	17,947	15,896	755	633	4,124	318	1,164	2,658	2,287	2,893	269	795	559	237	1,255
1938	17,282	15,348	715	611	4,044	316	1,102	2,597	2,248	2,702	244	769	548	217	1,169
1939	17,148	15,270	723	614	3,969	323	1,087	2,611	2,245	2,701	228	769	538	216	1,124
1940	17,355	15,481	707	634	4,151	319	1,083	2,662	2,238	2,712	206	769	545	214	1,115
1941	17,310	15,452	690	661	4,066	314	1,097	2,743	2,202	2,691	199	789	532	212	1,114
1942	17,276	14,849	675	636	3,906	302	1,053	2,667	2,081	2,592	182	755	514	209	1,704
1943	16,948	14,664	682	589	3,765	299	1,025	2,703	2,005	2,628	189	779	500	209	1,575
1944	18,124	15,962	753	597	3,839	321	1,380	2,950	2,082	2,906	201	933	406	212	1,544
1945	19,112	16,830	780	639	3,865	343	1,597	3,138	2,117	3,158	278	915	478	212	1,592
1946	19,327	16,828	767	656	3,865	346	1,599	3,147	2,110	3,169	287	882	478	210	1,811
1947	19,356	16,679	768	664	3,780	344	1,556	3,200	2,085	3,154	256	872	478	209	1,990
1948	20,921	18,164	805	799	3,849	380	1,917	3,566	2,169	3,449	211	1,019	478	207	2,072
1949	20,683	18,007	787	796	3,748	376	1,855	3,572	2,186	3,455	199	1,033	473	205	1,998
1950	20,001	17,427	761	769	3,622	357	1,759	3,498	2,146	3,326	176	1,013	467	202	1,905
1951	21,099	18,623	817	837	3,655	367	2,023	3,786	2,238	3,574	169	1,157	461	202	1,813
1952	20,828	18,420	808	817	3,554	362	1,992	3,856	2,204	3,474	158	1,195	460	196	1,752
1953	20,617	18,317	817	821	3,458	355	1,934	3,960	2,213	3,406	143	1,210	447	189	1,664
1954	20,491	17,838	811	802	3,355	348	1,845	3,937	2,182	3,263	128	1,167	875	183	1,595
1955	20,204	17,540	813	802	3,254	337	1,804	3,883	2,172	3,197	122	1,156	834	181	1,649
1956	18,221(b)	16,443	800	769	2,943	335	1,644	3,823	2,127	2,965	113	924	N.A.	154	1,624

Detail does not necessarily add to total because of independent rounding.

(a) Not including laundries, cleaning and dyeing establishments.

(b) Not including laundries, cleaning and dyeing establishments and other nonmanufacturing establishments excluded from the 1956 census.



TABLE 2: EMPLOYMENT BY MAJOR INDUSTRY GROUP: 1916 TO 1956

(Industry groups are as follows: 1. Chemicals and allied products, 2. Clay, glass, and stone products, 3. Food and kindred products, 4. Leather and rubber products, 5. Lumber and wood products, 6. Metal and metal products, 7. Paper and printing industries, 8. Textile and textile products, 9. Tobacco manufactures, 10. Miscellaneous manufactures.)

(All employment figures in thousands)

Year	Employment by major industry group															
	All industries	Total manufacturers	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(a)	Laundries	Rail-road repair	Mining
1916	1,481.6	1,123.4	45.3	68.3	60.4	37.9	37.9	528.6	56.1	206.7	32.5	49.8	10.5	N.A.	347.7	
1917	1,854.3	1,201.7	47.9	67.9	61.5	36.2	36.6	588.8	57.1	215.8	32.6	57.3	10.3	327.0	315.3	
1918	1,898.4	1,220.7	51.8	57.1	62.2	34.8	33.6	608.2	55.2	205.4	29.4	83.0	9.2	352.6	315.9	
1919	1,518.4	1,180.5	46.8	56.8	66.4	40.0	35.5	508.3	62.3	218.0	32.1	114.3	8.9	N.A.	329.2	
1920	1,599.6	1,257.8	45.5	63.5	72.2	48.8	35.4	570.0	63.8	226.2	42.1	90.3	10.8	N.A.	331.0	
1921	1,401.2	958.8	33.1	49.6	68.2	35.0	30.7	367.1	59.6	222.9	39.5	53.1	10.4	63.1	368.9	
1922	1,460.4	1,018.3	33.5	56.4	67.7	36.1	34.1	414.4	63.6	231.0	38.5	43.0	16.4	72.1	353.6	
1923	1,596.5	1,133.6	36.2	63.4	69.6	36.7	36.7	493.9	65.5	238.9	37.6	55.1	12.7	82.9	367.3	
1924	1,491.4	1,063.7	35.0	60.3	70.1	31.7	35.6	452.9	66.3	224.7	35.4	51.7	13.3	72.2	342.2	
1925	1,499.3	1,080.2	35.5	63.7	69.7	31.5	36.9	453.2	66.6	239.4	34.2	49.5	13.8	73.2	332.1	
1926	1,524.7	1,098.2	37.6	62.4	71.2	31.1	35.5	469.0	67.7	237.3	35.0	51.4	14.7	72.7	339.1	
1927	1,509.0	1,088.0	36.4	59.8	73.6	33.3	36.6	436.1	71.9	261.4	33.8	45.1	16.7	66.0	338.3	
1928	1,458.8	1,069.2	35.9	58.2	72.2	32.4	33.6	432.8	68.6	264.6	32.4	38.5	17.0	61.4	311.2	
1929	1,496.9	1,117.8	37.3	58.5	73.1	32.2	32.6	466.9	71.1	275.0	29.1	42.0	17.6	58.4	303.1	
1930	1,413.7	1,037.6	37.0	52.3	75.3	30.1	29.7	415.8	69.6	259.7	27.2	40.9	19.9	55.9	300.3	
1931	1,238.4	901.9	36.9	43.3	74.3	28.4	25.2	324.0	65.7	245.6	24.3	34.2	19.1	52.2	265.2	
1932	1,059.7	773.9	32.5	35.3	68.5	27.1	20.1	245.4	61.2	232.9	22.0	28.9	17.6	44.4	223.8	
1933	1,144.4	860.4	35.9	39.2	78.9	27.9	20.9	280.5	64.1	259.9	21.6	31.5	17.6	42.8	223.6	
1934	1,228.0	932.1	40.7	44.3	86.1	30.1	20.1	324.4	66.0	263.9	22.7	33.8	17.4	42.5	236.0	
1935	1,262.4	974.6	40.0	45.5	86.2	31.5	21.7	349.5	67.6	278.0	21.3	33.3	17.9	40.0	229.9	
1936	1,366.2	1,068.4	41.5	49.1	90.4	31.7	24.4	416.2	70.9	282.1	21.5	40.6	19.4	45.0	233.4	
1937	1,448.1	1,151.3	43.2	52.3	93.2	34.3	25.7	475.6	74.3	287.3	21.3	44.1	20.8	45.7	230.3	
1938	1,250.1	989.0	37.9	43.5	91.8	34.0	22.6	368.8	71.9	259.0	20.2	39.3	20.1	31.1	209.9	
1939	1,322.0	1,063.2	40.0	47.9	93.3	37.0	24.3	414.1	74.8	267.1	19.7	45.0	20.3	37.2	201.3	
1940	1,418.9	1,153.7	37.3	52.9	95.6	36.8	24.8	489.3	76.3	268.9	19.1	52.7	21.2	41.5	202.5	
1941	1,646.4	1,373.0	42.3	62.1	101.0	41.0	27.7	637.9	80.0	286.7	20.0	74.3	23.1	49.7	200.6	
1942	1,770.1	1,484.1	46.6	63.2	102.2	40.4	25.8	721.0	76.1	274.5	19.1	115.2	23.9	53.5	208.6	
1943	1,835.2	1,570.3	51.2	59.0	104.7	38.6	24.9	756.3	75.4	261.6	18.2	180.4	23.1	55.4	186.4	
1944	1,819.6	1,565.7	54.0	55.4	113.6	37.7	26.8	752.8	75.9	263.3	16.8	169.4	23.2	56.8	173.9	
1945	1,747.9	1,498.7	54.9	55.4	116.3	40.1	30.1	709.5	82.6	273.0	17.8	119.0	23.8	54.4	171.0	
1946	1,748.5	1,489.2	53.8	66.2	120.5	44.7	35.1	684.1	93.0	296.8	21.3	73.7	25.2	51.0	183.1	
1947	1,779.8	1,517.0	55.0	68.7	120.8	44.9	35.2	712.0	94.6	302.8	20.6	62.4	25.7	50.7	186.4	
1948	1,808.8	1,545.0	56.4	68.9	118.7	48.0	37.7	716.4	94.6	321.1	19.9	63.3	24.6	50.8	188.4	
1949	1,682.5	1,440.4	53.1	62.5	117.5	46.8	34.0	635.6	93.5	316.1	18.5	62.8	23.3	41.8	177.0	
1950	1,723.0	1,483.1	54.4	65.7	118.1	46.5	36.8	669.6	95.3	317.6	15.7	63.4	22.4	49.0	168.5	
1951	1,808.0	1,574.7	60.9	69.5	120.4	46.0	36.2	751.8	96.5	314.3	15.8	63.3	27.0	51.0	155.3	
1952	1,799.4	1,590.1	60.0	65.8	118.9	46.2	35.2	761.5	95.8	301.8	16.9	88.0	21.7	44.8	142.8	
1953	1,823.8	1,633.2	60.8	67.2	119.7	48.8	34.7	787.0	100.0	302.4	16.8	95.8	21.9	44.2	124.5	
1954	1,635.1	1,477.2	60.0	61.0	115.8	46.7	30.7	681.4	99.8	286.9	16.4	78.5	27.2	30.0	100.7	
1955	1,669.5	1,521.0	63.2	64.1	115.0	49.0	32.7	704.0	102.6	292.4	16.6	81.4	26.6	33.9	88.0	
1956	1,590.5(b)	1,479.3	64.8	64.3	115.2	46.0	29.8	710.5	99.5	259.5	14.4	75.3	N.A.	30.9	80.3	

TABLE 3: HORSEPOWER BY MAJOR INDUSTRY GROUP: 1928 TO 1954

(Industry groups are as follows: 1. Chemicals and allied products, 2. Clay, glass, and stone products, 3. Food and kindred products, 4. Leather and rubber products, 5. Lumber and wood products, 6. Metal and metal products, 7. Paper and printing industries, 8. Textile and textile products, 9. Tobacco manufactures, 10. Miscellaneous manufactures.)

Year	All industries	Total manufacturers	Horsepower by major industry group										Rail-road repair	Mining
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) (a)		
1928	8,279,944	6,163,277	229,251	483,956	319,620	86,943	118,103	4,146,324	234,577	337,300	8,223	198,980	27,742	1,929,278
1929	8,011,590	5,869,488	238,206	478,339	322,242	82,154	120,000	3,800,561	248,441	342,889	9,056	227,600	25,830	1,961,828
1930	8,108,333	6,088,349	245,080	479,143	349,051	82,774	122,065	3,961,028	253,897	356,197	8,068	231,046	31,928	1,827,653
1931	7,915,352	5,992,035	269,964	453,425	358,199	79,966	124,088	3,847,336	254,520	363,691	8,128	232,718	30,635	1,722,125
1932	7,756,982	5,909,225	280,824	423,551	370,793	76,858	114,491	3,798,680	243,907	356,868	8,283	234,970	30,325	1,655,383
1933	7,715,045	5,995,868	276,961	470,101	406,489	67,028	109,988	3,790,474	265,619	364,318	7,521	237,369	31,450	1,528,208
1934	7,781,153	6,001,335	282,105	468,688	405,732	67,498	107,330	3,805,543	267,301	347,778	8,547	240,813	32,790	1,584,663
1935	7,872,614	6,080,668	294,145	475,850	382,453	77,244	110,632	3,860,014	283,147	351,339	9,636	236,208	31,398	1,596,497
1936	8,063,796	6,067,227	283,691	465,847	402,974	76,792	106,078	3,856,951	283,709	342,817	9,843	238,525	30,818	1,804,491
1937	8,200,023	6,226,437	313,497	505,354	430,354	85,291	105,849	3,921,597	283,940	338,744	9,982	231,829	33,516	1,779,360
1938	8,242,659	6,282,664	314,614	476,863	412,499	96,537	106,483	3,998,036	314,356	330,718	10,232	222,326	33,316	1,765,149
1939	8,106,040	6,293,371	324,487	470,295	405,388	94,756	101,642	4,004,033	328,263	324,785	9,544	230,178	33,149	1,615,508
1940	8,292,512	6,490,131	326,417	495,199	411,628	97,256	98,266	4,155,554	322,762	324,422	9,773	248,854	33,398	1,606,785
1941	8,638,188	6,881,789	339,894	522,703	411,584	98,931	102,491	4,440,071	327,791	327,876	9,652	300,796	33,719	1,558,358
1942	8,950,888	7,076,481	349,128	504,813	414,864	99,829	101,724	4,598,546	320,168	333,521	9,719	344,169	33,581	1,661,772
1943	9,439,882	7,596,614	395,005	485,401	407,189	100,459	101,375	4,938,432	314,334	327,168	9,673	517,578	31,788	1,629,197
1944	9,826,318	7,912,798	413,191	454,272	424,039	106,010	131,051	5,175,108	324,108	330,523	9,956	544,540	32,881	1,697,752
1945	9,802,998	7,930,135	458,820	463,415	428,405	113,925	147,346	5,160,672	336,327	344,620	10,237	466,368	32,948	1,656,127
1946	9,878,433	7,854,274	488,364	501,550	442,741	118,715	154,863	5,012,470	342,817	363,245	10,793	418,715	39,309	1,788,588
1947	10,273,987	8,288,122	552,388	526,920	452,114	125,658	163,111	5,277,361	393,571	387,945	11,480	397,574	33,573	1,756,105
1948	10,965,145	8,692,520	572,359	542,324	491,136	167,634	211,404	5,481,037	421,891	401,373	11,946	391,416	34,779	1,994,672
1949	11,291,619	9,150,147	665,800	725,887	544,791	175,861	212,267	5,515,206	457,259	440,585	12,074	400,417	35,012	1,881,511
1950	11,470,527	9,301,159	685,100	674,026	546,122	163,200	219,406	5,664,927	462,731	446,778	10,980	427,889	34,777	1,907,639
1951	11,835,659	9,728,637	845,127	604,122	528,898	165,577	244,039	5,974,625	490,512	458,000	11,586	406,151	33,648	1,819,363
1952	12,111,759	9,925,379	859,562	621,548	470,593	171,676	236,654	6,161,227	481,585	438,699	13,038	470,797	32,854	1,902,447
1953	12,855,114	10,694,976	1,244,539	633,921	469,012	180,600	233,224	6,573,320	480,724	421,100	13,213	445,323	41,792	1,877,231
1954	12,752,344	10,641,009	938,858	643,247	476,380	197,761	225,572	6,744,950	557,855	395,479	13,620	447,287	42,644	1,858,262

Detail does not necessarily add to total because of independent rounding.

(a) Not including laundries, cleaning and dyeing establishments.



TABLE 4: WAGES AND SALARIES BY MAJOR INDUSTRY GROUP: 1916 TO 1956

(Industry groups are as follows: 1. Chemicals and allied products, 2. Clay, glass, and stone products, 3. Food and kindred products, 4. Leather and rubber products, 5. Lumber and wood products, 6. Metal and metal products, 7. Paper and printing industries, 8. Textile and textile products, 9. Tobacco manufactures, 10. Miscellaneous manufactures.)

(Figures in millions of dollars)

Year	All industries	Total manufactures	Wages and salaries by major industry group (in millions of dollars)										Rail-road repair	Mining
			(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10) Laundries		
1916	\$1,123.3	\$859.9	\$38.9	\$50.4	\$45.4	\$24.7	\$24.5	\$477.7	\$42.3	\$107.4	\$13.9	\$34.7	\$5.1	\$258.3
1917	1,766.2	1,101.4	45.9	58.2	51.8	28.3	27.8	641.5	50.2	128.3	18.1	51.3	5.5	335.3
1918	2,410.3	1,454.7	63.7	60.8	64.0	32.9	31.2	858.9	57.5	154.5	18.0	113.2	6.1	442.8
1919	1,951.4	1,503.6	63.8	65.9	78.4	45.4	37.8	765.8	73.6	191.2	22.7	159.0	6.7	441.3
1920	2,453.9	1,868.3	71.1	90.5	95.5	50.3	46.3	1,017.7	93.0	226.0	37.6	140.3	10.1	575.5
1921	1,787.5	1,154.0	46.8	55.5	87.3	39.3	35.6	504.4	83.9	205.7	26.9	68.6	9.6	518.7
1922	1,701.3	1,195.6	45.0	62.4	78.8	38.8	39.1	534.7	88.6	222.3	27.3	58.6	10.1	383.5
1923	2,340.4	1,568.2	53.8	85.9	89.3	42.6	46.0	794.9	96.0	253.7	29.4	76.6	11.9	623.9
1924	2,135.7	1,467.2	53.6	85.7	91.4	37.4	47.2	718.7	100.7	236.4	27.1	69.0	13.3	541.5
1925	2,092.0	1,527.4	57.0	90.6	95.6	37.9	48.5	734.2	103.1	268.6	26.4	65.5	14.1	435.7
1926	2,258.8	1,592.3	60.1	89.6	99.2	38.3	48.1	780.8	107.6	271.7	27.6	69.3	15.0	534.2
1927	2,203.2	1,586.7	61.3	83.9	104.7	41.3	50.8	728.6	117.9	307.8	26.1	64.3	18.3	488.4
1928	2,132.5	1,568.6	61.1	82.4	104.0	40.3	47.3	725.4	115.3	314.2	24.7	53.9	18.5	444.9
1929	2,237.3	1,679.4	64.8	83.8	104.4	39.6	46.1	807.9	121.8	326.3	24.1	60.6	19.3	443.6
1930	1,978.9	1,476.3	64.4	67.7	105.9	36.3	39.5	688.4	118.9	275.1	21.1	59.0	21.5	390.9
1931	1,504.4	1,117.6	60.6	48.4	98.0	30.6	29.7	451.7	105.5	230.4	16.5	46.2	19.4	294.1
1932	1,032.2	761.2	47.9	29.5	79.1	23.6	18.6	260.0	85.9	173.5	12.0	31.1	15.1	209.1
1933	1,061.8	803.1	48.5	30.6	81.1	24.3	17.3	286.3	80.7	191.1	12.1	31.1	14.2	199.8
1934	1,311.9	987.4	58.8	39.5	96.0	28.7	18.2	384.4	89.6	221.5	14.6	36.1	14.8	257.8
1935	1,420.3	1,101.2	59.7	47.1	98.4	31.0	21.1	448.7	95.4	247.9	13.7	38.2	15.6	250.4
1936	1,677.6	1,305.4	65.5	56.2	108.4	33.0	25.1	593.5	103.5	255.4	14.9	49.9	17.2	285.9
1937	1,926.7	1,548.2	73.4	68.9	116.9	36.2	28.2	777.8	114.1	258.5	15.6	58.6	19.2	286.0
1938	1,480.1	1,189.8	64.6	51.1	115.9	34.4	23.1	510.0	107.2	218.8	14.4	50.3	19.3	224.8
1939	1,700.8	1,379.7	69.5	61.6	118.7	39.5	25.5	634.6	114.2	240.8	14.7	60.6	19.7	238.7
1940	1,940.1	1,579.9	65.6	71.1	122.6	39.7	26.9	799.3	120.1	244.6	15.6	74.4	20.7	265.9
1941	2,662.3	2,232.7	80.9	95.8	136.2	52.7	34.0	1,245.5	135.4	307.1	17.1	128.0	23.6	312.1
1942	3,416.7	2,883.9	96.0	107.2	152.1	60.2	36.3	1,663.0	138.8	344.1	20.2	266.0	26.2	393.0
1943	4,039.4	3,471.8	118.8	110.2	170.9	65.6	39.1	1,923.9	149.2	385.5	22.5	486.1	28.3	414.0
1944	4,330.4	3,685.3	133.9	112.3	195.9	71.2	44.6	2,048.2	161.1	411.3	23.3	483.5	31.2	469.4
1945	3,995.6	3,378.1	135.5	111.0	207.4	73.3	48.2	1,858.9	177.7	430.3	24.6	311.2	33.3	446.0
1946	3,968.8	3,280.4	144.6	145.5	236.3	89.8	62.7	1,652.7	225.1	528.5	30.9	164.3	39.3	505.0
1947	4,703.4	3,917.0	165.8	172.8	264.8	97.6	73.6	2,101.0	264.5	591.3	32.2	153.4	42.7	589.9
1948	5,206.9	4,356.2	190.8	192.3	282.8	111.8	84.7	2,311.8	290.7	681.3	33.3	176.7	44.6	639.8
1949	4,705.9	4,038.5	185.4	176.3	291.9	108.9	75.3	2,062.3	296.0	640.5	30.2	171.7	43.8	488.9
1950	5,143.0	4,399.0	197.4	195.4	303.4	115.5	87.9	2,275.8	318.5	698.4	29.1	177.6	43.2	533.8
1951	6,042.0	5,242.0	237.1	233.4	326.4	123.8	92.4	2,923.7	347.7	718.0	27.4	212.1	45.3	567.8
1952	6,178.4	5,457.3	244.6	230.8	338.0	129.8	93.3	3,042.2	362.5	702.9	36.4	276.8	46.6	506.8
1953	6,755.0	6,064.7	258.4	253.5	355.8	144.0	97.4	3,456.5	391.8	725.1	36.4	345.8	47.8	470.5
1954	5,945.1	5,430.8	265.3	234.4	360.6	134.9	84.8	2,945.8	399.6	662.9	34.9	307.6	49.8	341.2
1955	6,367.2	5,877.3	294.8	262.8	371.4	146.9	92.6	3,247.4	421.8	697.9	35.3	306.4	N.A.	352.3
1956 (b)	6,865.6	6,353.0	324.1	286.8	423.8	153.5	96.8	3,549.7	449.0	710.3	38.8	320.2	N.A.	374.7

N.A. Not available

TABLE 5. VALUE OF PRODUCTION BY MAJOR INDUSTRY GROUP: 1916 TO 1956

(Industry groups are as follows: 1. Chemicals and allied products, 2. Clay, glass, and stone products, 3. Food and kindred products, 4. Leather and rubber products, 5. Lumber and wood products, 6. Metal and metal products, 7. Paper and printing industries, 8. Textile and textile products, 9. Tobacco manufactures, 10. Miscellaneous manufactures.)

(All values in millions of dollars)

Year	Value of production by major industry group (in millions of dollars)										Rail- road repair	Mining			
	All industries	Total manufacturers	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)			(9)	(10) (a) Laundries	
1916	\$5,958.8	\$5,544.2	\$367.5	\$135.1	\$394.2	\$236.2	\$88.3	\$3,322.1	\$175.4	\$601.4	\$ 50.4	\$173.6	\$10.3	\$ N.A.	\$ 404.3
1917	7,942.9	7,140.2	413.1	182.3	451.7	239.0	101.0	4,515.9	195.4	693.2	66.0	282.6	11.4	140.3	651.0
1918	8,970.3	7,935.3	542.1	165.4	598.8	242.6	116.9	4,774.6	203.0	855.2	66.9	369.8	12.3	230.5	792.4
1919	8,046.4	7,310.9	470.0	173.7	661.2	359.2	145.0	3,676.0	270.6	994.2	94.0	467.0	13.0	N.A.	722.5
1920	10,336.0	9,273.2	579.9	247.5	786.7	291.9	171.7	4,980.1	379.6	1,144.0	144.0	547.8	20.2	N.A.	1,042.4
1921	6,044.1	5,038.7	340.0	152.6	532.6	197.5	110.1	2,171.7	275.2	885.0	122.2	251.8	18.9	175.0	811.5
1922	6,570.4	5,744.2	373.5	189.3	548.7	204.6	125.8	2,641.3	306.5	994.3	120.3	239.9	20.1	202.4	603.7
1923	8,888.8	7,618.7	423.1	253.6	593.2	209.3	146.1	4,054.7	337.0	1,147.1	121.4	333.2	24.3	261.3	984.5
1924	7,565.1	6,528.0	379.9	239.0	609.1	185.4	139.5	3,255.6	338.9	1,006.4	123.4	250.8	26.0	215.5	795.6
1925	7,812.9	6,919.6	438.7	257.4	616.1	194.4	143.9	3,401.8	357.9	1,121.1	124.8	263.5	28.0	216.9	648.4
1926	8,001.1	6,931.1	451.8	259.3	653.3	191.8	145.8	3,353.5	372.0	1,107.6	126.3	269.7	34.2	211.4	824.4
1927	7,503.2	6,535.7	428.7	233.5	650.9	208.0	144.1	2,947.1	391.7	1,173.6	121.7	236.4	40.3	192.9	734.3
1928	7,512.9	6,614.6	443.4	229.2	631.2	222.7	130.5	3,024.9	391.2	1,212.0	113.2	216.3	40.5	187.3	670.5
1929	8,162.0	7,270.0	468.4	236.2	639.3	206.7	127.1	3,569.3	410.4	1,259.9	113.6	239.1	36.8	163.9	691.3
1930	6,691.1	5,880.9	424.9	188.1	627.2	175.5	102.2	2,702.0	380.2	986.8	93.2	200.8	44.9	160.0	605.3
1931	4,682.7	4,064.7	338.4	126.5	520.8	132.6	72.1	1,547.0	324.8	776.3	77.5	148.7	41.9	109.9	466.2
1932	3,118.0	2,676.7	293.7	80.9	410.2	96.3	43.7	802.5	246.7	548.0	55.4	99.3	32.2	78.5	330.6
1933	3,492.4	3,056.7	300.4	92.9	442.8	103.8	44.8	1,048.7	242.2	617.5	54.8	108.6	31.4	78.3	326.0
1934	4,246.1	3,693.9	368.2	117.2	587.7	118.2	46.5	1,347.1	274.5	646.4	64.2	123.9	31.6	100.6	420.0
1935	4,749.0	4,225.7	380.7	138.0	610.2	134.6	56.1	1,654.0	294.0	749.0	67.4	141.7	28.8	98.0	396.5
1936	6,051.1	5,420.7	441.4	173.2	722.1	152.0	70.3	2,440.1	320.7	831.2	76.6	193.1	33.0	139.8	457.6
1937	6,884.0	6,251.5	498.4	199.6	770.3	175.3	78.2	3,058.3	350.4	819.4	85.5	216.1	36.8	149.5	446.2
1938	4,842.4	4,371.9	404.6	136.0	685.3	150.9	59.9	1,721.6	312.1	657.7	86.3	157.5	35.6	83.3	351.6
1939	5,705.5	5,163.4	461.2	178.1	714.2	181.0	72.1	2,128.2	340.0	779.7	89.1	219.8	36.0	123.6	382.5
1940	6,802.1	6,186.0	518.1	206.6	740.8	175.0	79.7	2,944.8	372.1	795.5	92.3	261.1	38.6	124.7	452.8
1941	9,553.5	8,769.4	673.9	283.0	872.9	245.2	104.5	4,617.2	438.6	1,036.8	97.7	399.6	45.2	170.9	568.0
1942	12,051.9	11,111.2	716.6	301.1	1,037.1	284.3	113.2	6,143.2	452.7	1,187.8	106.4	768.8	55.7	207.6	677.4
1943	14,021.7	12,988.9	878.8	301.2	1,224.9	315.6	123.1	7,093.4	501.0	1,302.3	120.8	1,127.8	52.1	222.3	758.4
1944	15,081.3	13,928.9	1,037.9	294.7	1,448.9	341.3	152.9	7,209.2	614.7	1,385.5	135.4	1,308.4	66.4	228.5	857.5
1945	13,268.8	12,183.8	988.5	293.7	1,559.6	344.2	146.9	5,920.6	586.0	1,385.6	142.1	816.6	64.3	214.7	806.0
1946	12,947.7	11,726.3	1,008.2	380.5	1,964.5	383.5	185.1	4,678.4	729.2	1,756.3	152.7	487.9	71.9	212.8	936.7
1947	16,480.4	15,072.2	1,344.1	456.1	2,090.2	453.0	219.4	6,935.8	889.2	1,942.7	158.0	583.7	79.6	231.6	1,097.0
1948	18,587.8	17,060.1	1,548.5	506.3	2,186.0	484.1	258.1	8,147.9	951.8	2,175.7	161.3	640.4	80.2	251.4	1,196.1
1949	16,944.6	15,752.3	1,374.1	500.2	2,055.0	463.6	215.7	7,431.8	919.6	1,990.0	150.6	651.7	78.5	227.9	885.9
1950	19,484.8	18,080.3	1,617.5	544.9	2,175.9	518.6	323.3	8,737.3	1,033.8	2,282.6	140.8	705.6	82.0	296.5	1,026.0
1951	23,097.6	21,588.0	1,992.4	644.9	2,351.4	587.8	292.2	11,137.3	1,233.2	2,375.7	147.3	825.8	82.0	334.0	1,093.6
1952	22,478.0	21,152.0	1,977.7	640.8	2,331.4	507.5	281.7	10,893.9	1,188.5	2,208.1	170.7	951.7	82.1	287.2	956.7
1953	24,600.5	23,301.0	2,049.5	705.4	2,370.6	530.0	291.9	12,504.7	1,261.4	2,207.8	174.8	1,204.9	84.2	293.0	922.3
1954	21,212.5	20,206.0	2,062.4	661.0	2,380.1	491.2	258.3	9,996.7	1,266.4	1,989.6	167.4	932.9	104.6	204.9	697.0
1955	24,142.6	23,145.7	2,376.8	807.4	2,415.8	604.7	297.5	11,903.4	1,356.7	2,179.9	169.5	1,034.0	N.A.	226.6	770.3
1956 (b)	26,878.6	25,771.3	2,487.0	887.8	2,529.7	630.9	317.4	13,835.8	1,500.4	2,239.6	181.5	1,161.2	N.A.	265.7	841.6

N.A. Not available.

Not including laundries, cleaning and dyeing establishments.

TABLE 6: VALUE ADDED BY MANUFACTURE BY MAJOR INDUSTRY GROUP: 1940 TO 1956

(Industry groups are as follows: 1. Chemical and allied products, 2. Clay, glass, and stone products, 3. Food and kindred products, 4. Leather and rubber products, 5. Lumber and wood products, 6. Metal and metal products, 7. Paper and printing industries, 8. Textile and textile products, 9. Tobacco manufactures, 10. Miscellaneous manufactures.)

(All values in millions of dollars)

Year	Value added by manufacture by major industry group (in millions of dollars)												
	All industries	Total manufacturers	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	Mining (b)
1940	\$2,852.7	\$2,832.1	\$185.9	\$127.5	\$284.0	\$64.7	\$ 41.0	\$1,375.8	\$211.8	\$ 375.9	\$38.7	\$126.8	\$20.6
1941	4,264.8	4,178.1	262.3	170.0	323.9	94.8	54.0	2,285.8	246.5	489.9	42.4	208.5	26.7
1942	5,535.3	5,506.8	287.6	189.0	381.1	114.3	57.1	3,200.2	256.7	567.8	46.7	406.3	28.5
1943	6,525.0	6,496.4	340.9	190.5	417.5	124.6	61.4	3,743.1	285.9	637.6	55.0	639.9	26.6
1944	6,686.5	6,560.6	369.4	183.9	472.3	136.8	77.4	3,652.3	350.3	678.6	60.8	678.8	25.9
1945	5,716.5	5,687.8	340.6	178.0	529.1	137.0	75.7	2,897.0	337.0	706.0	61.0	426.4	28.7
1946	5,446.4	5,412.1	372.1	230.1	629.0	154.1	96.0	2,341.5	416.3	859.5	75.4	238.1	34.3
1947	6,783.9	6,742.4	464.3	277.8	620.8	169.5	110.1	3,323.5	489.8	950.9	75.8	259.9	41.5
1948	7,565.3	7,517.8	518.2	312.2	610.4	190.6	128.7	3,812.7	512.9	1,066.5	76.4	289.0	47.5
1949	7,062.5	7,017.1	458.3	310.7	620.7	193.4	110.9	3,460.2	530.1	962.1	69.6	301.1	45.4
1950	8,193.8	8,137.9	546.3	342.7	655.5	215.3	162.9	4,137.9	576.5	1,104.0	66.2	330.6	55.9
1951	9,491.7	9,423.1	672.1	403.1	678.9	231.0	140.1	5,068.4	673.1	1,116.8	70.5	369.1	68.6
1952	9,561.6	9,501.6	696.4	400.4	680.0	226.2	139.5	5,104.5	664.9	1,054.4	82.7	452.6	60.0
1953	10,587.6	10,524.4	728.1	445.6	729.0	234.5	146.4	5,775.8	711.4	1,071.5	84.0	598.1	63.2
1954	9,549.4	9,493.1	729.9	417.9	734.4	222.8	130.2	4,969.9	718.6	998.2	79.8	491.4	56.3
1955	10,850.4	10,774.7	852.2	525.4	804.3	303.8	146.2	5,678.0	772.9	1,071.6	82.5	537.8	75.7
1956	11,902.2	11,832.4	920.6	579.8	925.1	305.0	161.3	6,315.0	849.1	1,082.1	86.7	607.7	69.8

Detail may not add to total because of independent rounding.

(a) Not including laundries, railroad repair establishments or mineral industries listed in foot note (b).

(b) Not including the coal mining or sand and gravel industries.



# APPENDIX A

## LIST OF PRODUCTIVE INDUSTRY REPORTS

Eighteen copies of the "Productive Industry Reports" have been published by the Department of Internal Affairs. The first volume, published in 1920, was called "Report of the Productive Industries of the Commonwealth of Pennsylvania". The title of the second volume, "Report on Productive Industries, Railways, Taxes and Assessments, Waterways, and Miscellaneous Statistics", was used for the second through fifth volumes covering the years 1920 through 1925. The statistics for 1926 and subsequent years were published under the title "Report on Productive Industries, Public Utilities, and Miscellaneous Statistics."

The years included in each volume, the date of publication, and the number of pages for each of the 18 volumes are as follows:

Volume number	Years covered	Date of publication	Number of pages
1	1916-19	1920	878
2	1920	1921	1,040
3	1921	1922	988
4	1922-23	1924	767
5	1924-25	1926	670
6	1926	1927	496
7	1927	1928	467
8	1928	1930	495
9	1929-30	1931	499 and 499
10	1931	1933	565
11	1932	1934	561
12	1933	1935	529
13	1934	1936	527
14	1935	1937	527
15	1936-38	1940	1,096
16	1939-41	1945	1,016
17	1942-44	1947	790
18	1945-50	1952	811



[illegible][illegible]





ITEM 6 VALUE OF PRODUCTION, CONTRACT WORK, AND MISCELLANEOUS RECEIPTS DURING 1946		
A. Production (See instructions for method of valuing crop/stock transfers)		
Description of products made in this establishment	Percent share total available	Market value of production in 1946 (total market)
1.		\$
2.		\$
3.		\$
4.		\$
5.		\$
6.		\$
7.		\$
8.		\$
Total		\$

ITEM 7 COST OF MATERIALS, FUEL, ELECTRIC ENERGY, CONTRACT WORK, ETC.		
B. Receipts for work done for others on their materials (contract work) (describe work)		
	\$	(total cents)
C. Miscellaneous receipts for repair work, sale of scrap, installation of own products, and net returns from resale of products which this establishment has not further manufactured	\$	
D. Total (sum of A, B, and C)	\$	

ITEM 8 COST OF MATERIALS, FUEL, ELECTRIC ENERGY, CONTRACT WORK, ETC.		
A. Materials, parts, components, containers, supplies, etc. consumed	\$	(total cents)
B. Fuel consumed	\$	
C. Purchased electric energy	\$	
D. Cost of contract work done for you by others on your materials	\$	
E. Total (sum of A through D)	\$	
ITEM 9 VALUE ADDED BY MANUFACTURE	\$	(total cents)
Item 6-D minus Item 7-E	\$	

ITEM 9 INDUSTRIAL WATER INTAKE DURING 1946 FROM OTHER THAN PUBLIC WATER SYSTEMS		
(See instructions for method of estimation if exact records are not available)		
A. Quantity of water intake from company surface water systems		(unit/sum of gallons)
B. Quantity of water intake from company ground water systems		
C. Total water intake from company water systems (sum of A plus B)		

ITEM 10 CHECKS TO ASSURE A COMPLETE AND ACCURATE REPORT		
1. Do you have a record of the production of each item of material and of the amount of value? To save you future trouble, please check the boxes below. If you have no record of production, you should not report the value of production. If you have a record of production, you should report the value of production. If you have a record of production, you should report the value of production. If you have a record of production, you should report the value of production.		
2. Be sure that the sales or market values of products are reported in Item 6, rather than cost values.		
3. "Value added in manufacture" in Item 8 should be larger than "Total wages and salaries" in Item 5-B. If not, explain under "Remarks".		
ITEM 11 Name and Address of Person Who Should Be Contacted if Questions Arise Regarding This Report	Telephone Number	
ITEM 12 This Report is An Anonymous Report Covering The 1946 Calendar Year		
(date)	(date)	(signature of authorized person)



## APPENDIX C

## STATISTICS FOR NONMANUFACTURING PLANTS EXCLUDED IN THE 1956 INDUSTRIAL CENSUS

DIA Industry group	Number of establishments	Number of employees
All industries	792	6,723
Chemicals and allied products	32	512
Clay, glass, and stone products	23	138
Food and kindred products	169	617
Leather and rubber goods	4	12
Lumber and wood products	150	736
Metals and metal products	81	644
Mines and quarry products	47	147
Paper and printing industries	21	284
Textiles and textile products	87	1,923
Tobacco manufactures	1	54
Miscellaneous products	177	1,656

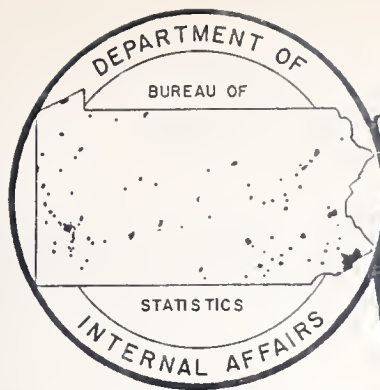
## ESTABLISHMENTS IN SIC INDUSTRY GROUPS BY DIA INDUSTRY GROUPS: 1956

SIC Industry group	Total number of establishments	Number of establishments in DIA industry groups											Misc. products
		Chemicals and allied products	Clay, glass, and stone products	Food and kindred products	Leather and rubber goods	Lumber and its remanufacture	Metals and metal products	Mines and quarry products	Paper and printing industries	Textile and textile products	Tobacco and its products		
Total all industries	16,550	800	769	2,943	335	1,644	3,823	107	2,127	2,965	113	924	
Food and kindred products	2,945	5		2,931	4					5			
Tobacco manufactures	113										113		
Textile mill products	972	1			1	1	2		2	966		4	
Apparel and related products	2,009	2			9				1	1,958		39	
Lumber and wood products	1,179					1,163						12	
Furniture and fixtures	484	4			1	299	71		1	2		106	
Paper, pulp, and products	354	1				2	5		345	4		2	
Printing and publishing	1,778	1		1			2		1,763	2		6	
Chemicals and products	636	605	7	11	1		2	1	1	5		3	
Petroleum and coal products	122	51	37									31	
Rubber products	66				60					1		5	
Leather and leather products	254				246	1				4		3	
Stone, clay, and glass products	865	2	705		2			105		2		36	
Primary metal industries	534	1					13			1		1	
Fabricated metal products	1,406		7			3	531		1	1		96	
Machinery, except electrical	1,437	2	4		2	120	1,298		2	1		9	
Electrical machinery	358	4	4		1		332		1			16	
Transportation equipment	166					41	81					44	
Instruments and related products	189	2	1		3		77		1	2		103	
Miscellaneous manufactures	683	119	4		5	14	112	1	9	11		408	

## APPENDIX D

## EMPLOYMENT IN SIC INDUSTRY GROUPS BY DIA INDUSTRY GROUPS: 1956

SIC Industry group	Total number of employees	Number of employees in DIA industry groups										
		Chemicals and allied products	Clay, glass, and stone products	Food and kindred products	Leather and rubber goods	Lumber and its remanufac- ture	Metals and metal products	Mines and quarry products	Paper and printing industries	Textile and textile products	Tobacco and its products	Misc products
Total all industries	1,480,684	64,808	64,347	115,168	45,998	29,845	710,485	1,399	99,495	259,450	14,413	75,276
Food and kindred products	115,199	41		114,924	34					200		
Tobacco manufactures	14,413										14,413	
Textile mill products	97,799	2			19	159				92,757		5,021
Apparel and related products	162,632	15			731					160,303		1,424
Lumber and wood products	14,703					14,465	4		10			224
Furniture and fixtures	21,001	23			6	12,350	6,044		25	54		2,499
Paper, pulp, and products	40,565	44				42			40,211	105		163
Printing and publishing	58,386	77		3			37		58,159	75		35
Chemicals and products	46,002	40,847	495	241	21		26	23	1	4,167		181
Petroleum and coal products	25,422	16,009	640				116		217			8,440
Rubber products	13,679				12,955					1		723
Leather and leather products	31,936				31,487	70				210		169
Stone, clay, and glass products	68,501	57	61,209		19		683	1,280		974		4,279
Primary metal industries	270,329						269,565			180		584
Fabricated metal products	110,110		635			42	104,813		2	6		4,612
Machinery, except electrical	128,808	18	101		31	1,426	126,886		220	20		106
Electrical machinery	130,201	54	1,224		414		125,372		9			3,128
Transportation equipment	72,730					739	51,107					20,884
Instruments and related products	20,579	20	4		54		15,127		70	111		5,193
Miscellaneous manufactures	37,689	7,601	39		227	552	10,705	96	571	287		17,611



# CAPITAL INVESTMENT BY INDUSTRY

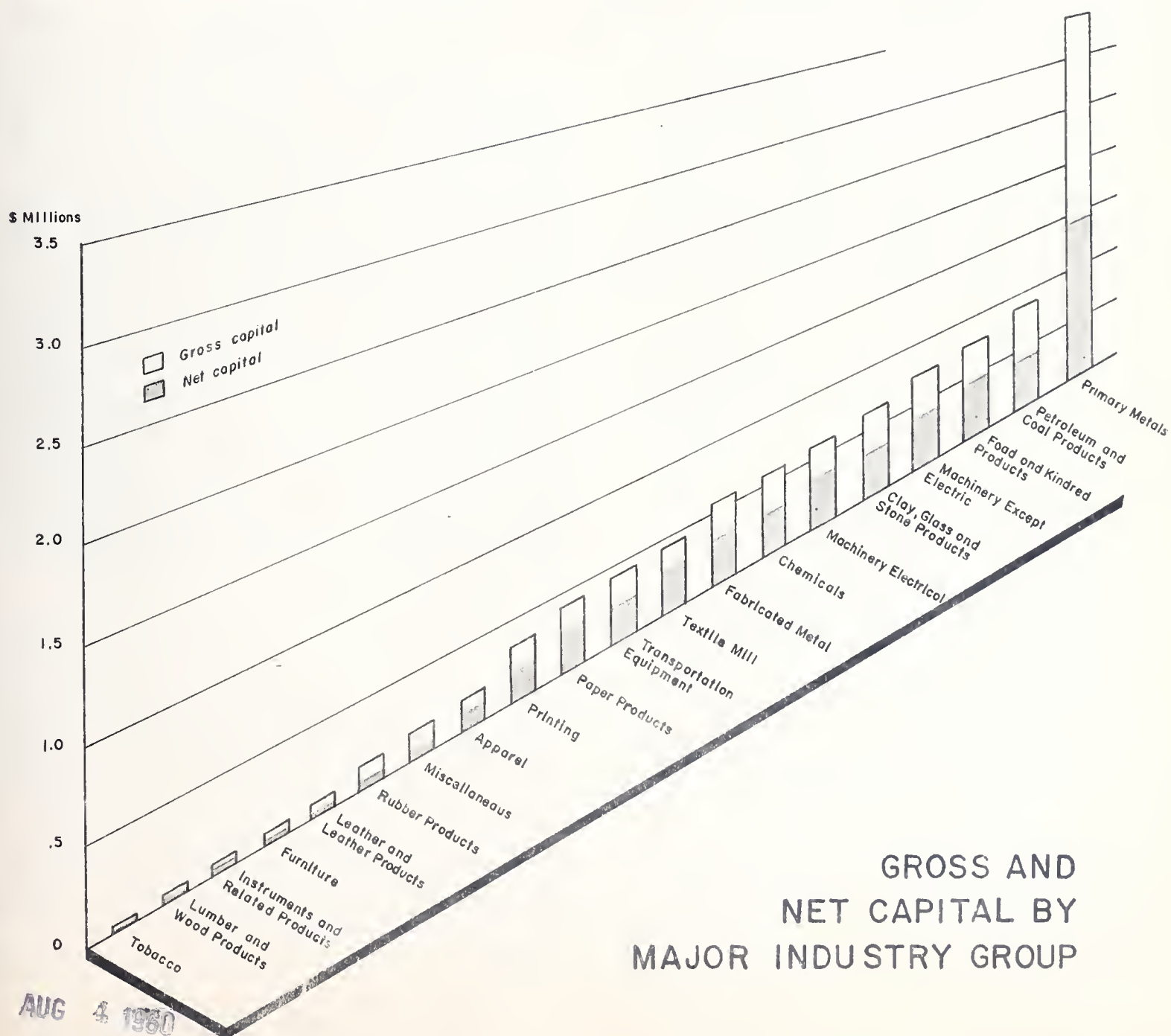
DEPARTMENT OF  
INTERNAL AFFAIRS  
Genevieve Blatt, Secretary

BUREAU OF STATISTICS  
Kenneth Masters, Director  
Elmer Larson, Asst. Director

APRIL 1959

SPECIAL RELEASE S-4

## CAPITAL INVESTMENT FOR MANUFACTURING AND MINING INDUSTRIES IN PENNSYLVANIA, 1956





# CAPITAL INVESTMENT FOR THE MANUFACTURING AND MINING INDUSTRIES IN PENNSYLVANIA, 1956

## A. INTRODUCTION:

This report presents data collected in the 1956 Industrial Census of Pennsylvania by the Bureau of Statistics in the Department of Internal Affairs. Statistics from the 1956 Census cover manufacturing and mining establishments in Pennsylvania having production in 1956 of \$1,000 or more. Separate report forms were required from all manufacturing plants and mineral establishments in the State as provided for in the Act of April 20, 1921, P. L. 193. The 1956 Industrial Census of Pennsylvania covers all establishments primarily engaged in manufacturing and mining as defined by the Standard Industrial Classification Manual, Volumes I and II as amended by the Federal Bureau of the Budget, except as noted in Part C: Completeness of coverage and adequacy of classification are checked by field investigation and by cooperative interchange of information with state and federal agencies.

The Industrial Censuses of Pennsylvania conducted by the Bureau of Statistics between 1913 and 1955 included a question on capital investment. In the late 1920's an instruction was added stating that "Capital invested should represent the amount of money actually invested in plant and equipment including the value of land used in connection with plant." Respondents were cautioned not to include the value of capital stock. In cases where companies reported that they rented their plant, primarily a small percentage of apparel and related products manufacturers, value of capital was estimated at ten times the annual rental. Statistics on capital investment derived from those censuses have been published in the Productive Industries Reports published by the Department of Internal Affairs.

Statistics on capital investment in 1955 are shown in table 1 of this release for the major industry groups used in this census. Because these industry groups do not represent Standard Industrial Classifications (SIC) they are referred to as "DIA" Industry Groups after the initials of the Department of Internal Affairs. See Part D for a further discussion. The results of the 1956 Industrial Census were tabulated for both SIC and DIA Industry Groups.

The report forms used in the 1956 Industrial Census were completely revised and definitions comparable with those used by the Industry Division of the U. S. Bureau of the Census were generally adopted. In order to evaluate the significance of the capital invested figures collected in 1955 and previous years, a special item on fixed capital, capital expenditures, and rentals was added to the 1956 form which is shown in Appendix A of this report together with the instructions which accompanied the report form.

In the fall of 1957, a follow-up questionnaire was prepared to assess the quality of the responses on capital investment and other information collected in the 1956 Industrial Census. Field investigators interviewed a random sample of 111 establishments stratified by industry groups in six counties. The questionnaire used in the quality control follow-up, the instructions to the field investigators, and a summary of the results are presented in Appendix B.

## B. EXPLANATION OF TERMS:

1. A manufacturing establishment is defined as a single physical location where inorganic or organic substances are transformed into new products by mechanical or chemical processes; for example, a factory, mill, or plant. An establishment is not necessarily identical with the business concern or firm which may consist of one or more establishments. Central administrative offices and auxiliary units such as storage warehouses, research laboratories, and repair shops which serve the manufacturing establishments of a company are not counted as separate establishments.

2. Mineral establishments include all mines and quarries engaged in the initial mining and quarrying activities and subsequent processing.

3. Capital investment, 1955 was defined in the 1955 Industrial Census as "the amount of money actually invested in plant and equipment including the value of land used in connection with land." The value of plants which were rented was estimated at ten times the annual rental.

4. Gross capital investment refers to the undepreciated balance sheet values of plant, machinery, equipment, and other fixed assets for which depreciation accounts are ordinarily maintained. Estimated capital values of plant, property, machinery, and equipment which have been rented are obtained by multiplying the annual rental times eight.

5. Net capital investment is the gross capital investment minus the depreciation reserve, if any.

6. Land was not defined on the questionnaire. In the Census of Mineral Industries the value of mineral deposits are included with the value of land.

7. Capital expenditures during 1956 consist of expenditures for plant, machinery, equipment, major alterations, and capitalized improvements which are chargeable to the fixed assets accounts of the establishment. Capital expenditures for mineral establishments include expenditures for development and exploration of mineral property during 1956.

## C. COMPARABILITY WITH OTHER STATISTICAL SERIES:

The data collected in the 1956 Industrial Census are in general comparable with statistics collected by the Bureau of the Census with the following exceptions: 1. The Bureau of Statistics has not attempted to collect separate reports for manufacturers' central administrative offices and auxiliary units. Only subsidiary administrative, storage, or research operations for reporting manufacturing establishments have been included in the census results. 2. Establishments engaged in the sole production of fluid milk and cream (SIC code 2027) are not included in the census although producers of fluid milk together with cream and other dairy products are included. 3. Logging camps and contractors (SIC code 2411) are not included in the 1956 Industrial Census. 4. The Crude petroleum and natural gas extraction industry has not been included in the Census of Mineral Industries although classified in the Mining division in the Standard Industrial Classification.

## D. COMPARABILITY OF DATA WITH PREVIOUS INDUSTRIAL CENSUSES:

In the 1956 Industrial Census of Pennsylvania, the scope of the census and the system of industrial classifications were based upon the Standard Industrial Classifications as amended by the U. S. Bureau of the Budget. Data for the Pennsylvania Industrial censuses in prior years were classified by a system of industrial classifications formulated by the Department of Internal Affairs and originally based on classifications used by the Bureau of Census in the early Censuses of Manufacturers. For 1954 and prior years the scope of the census included manufacturing plants; mines and quarries; railroad repair establishments; and laundry, cleaning, and dyeing establishments. Employment and production statistics for the subsidiary manufacturing operations of non-manufacturing establishments were classified in the manufacturing industry to which the manufactured products were primary. In the 1955 census the statistics for laundry, cleaning, and dyeing establishments were not tabulated with the other industrial establishments; in the 1956 census these establishments were eliminated from the scope of the census. Although some tabulations of data for 1955 were presented for total manufacturing, mining, and railroad repair operations, most of the 1955 data were presented separately for each of these three industrial divisions. In the 1956 census, statistics for each division have been tabulated separately. Statistics for railroad repair establishments were collected as a part of the Census of Railroads in Pennsylvania rather than as a part of the Census of Manufacturing Industries. Statistics for non-manufacturing establishments with subsidiary manufacturing operations have also been excluded from the statistics for the Census of Manufacturing Industries; statistics for nonmanufacturing operations and other statistics useful for evaluating the comparability of statistics for 1956 and prior years are presented in Special Release S-2, Industrial Statistics for Pennsylvania: 1951 to 1955.

## E. CONFIDENTIALITY OF DATA FOR INDIVIDUAL COMPANIES:

Statistical data for manufacturing and mining establishments, except for total number of employees, are confidential and are not disclosed for individual companies. The Bureau of Statistics follows a rule of not releasing data for fewer than three establishments, or for more than three establishments where data for areas smaller than counties could be subtracted from county totals revealing data for individual companies. When it has not been possible to publish both county and city data for industry groups, preference has been given to county data.

## F. OTHER SOURCES OF DATA ON CAPITAL EXPENDITURES:

The U. S. Bureau of the Census has collected statistics on expenditures for new plant and equipment in the 1947 and 1954 Censuses of Manufacturers and in the annual surveys of 1949-53 and 1955-57. Capital expenditures for 1956 for all manufacturing industries in Pennsylvania were \$811,396,000. Additional data on capital expenditures are included in each of the four regular releases on manufacturing industries prepared by the Bureau of Statistics.

The Federal Reserve Bank of Philadelphia conducts an annual survey on anticipated capital expenditures for manufacturers in the eight county Philadelphia Standard Metropolitan Area.

TABLE 1: CAPITAL INVESTMENT BY MAJOR INDUSTRY GROUPS (DIA), 1955 AND 1956  
AND CAPITAL EXPENDITURES DURING 1956 (in thousands of dollars)

DIA Industry group	Capital investment 1955	Value of fixed capital, Jan. 1, 1956			Capital expenditures during 1956	Value of fixed capital, Dec. 31, 1956		
		Gross capital	Net capital	Land		Gross capital	Net capital	Land
Total	\$8,158,081	\$9,794,598	\$4,996,240	\$283,743	\$833,379	\$10,370,108	\$5,147,448	\$289,293
Chemicals and allied products	803,851	1,061,240	565,131	26,586	103,507	1,136,868	591,049	27,571
Clay, glass, and stone products	345,805	523,702	263,240	16,961	67,050	571,293	290,833	18,394
Food and kindred products	552,360	699,802	403,070	28,757	50,075	736,106	418,361	29,273
Leather and rubber products	122,139	170,820	103,919	2,310	11,924	180,340	104,407	2,424
Lumber and wood products	79,584	93,572	59,242	6,234	7,492	98,378	60,838	6,328
Metals and metal products	4,195,431	5,404,981	2,571,233	153,261	464,377	5,725,346	2,632,656	155,251
Mine and quarry products(1)	694,865	14,383	8,193	1,061	759	15,140	7,995	1,087
Paper and printing industries	493,381	688,800	406,558	21,558	57,458	733,253	429,756	22,153
Textile and textile products	438,831	635,888	359,040	13,105	30,292	650,615	355,022	12,721
Tobacco manufactures	27,362	31,167	22,453	525	1,710	32,824	22,933	525
Miscellaneous products	404,472	470,243	234,162	13,385	38,736	489,945	233,597	13,566

Detail may not add to total because of rounding.

(1) Not including establishments classified according to SIC as mineral establishments.

TABLE 2: CAPITAL INVESTMENT BY SIC INDUSTRY GROUP FOR 1956 (in thousands of dollars)

SIC Industry group		Value of fixed capital, Jan. 1, 1956			Value of fixed capital, Dec. 31, 1956		
		Gross capital	Net capital	Land	Gross capital	Net capital	Land
Total manufacturing industries		\$9,794,598	\$4,996,240	\$283,743	\$10,370,108	\$5,147,448	\$289,294
20	Total food and kindred products	699,808	403,070	28,762	736,213	418,458	29,310
2011	Meat packing, wholesale	37,150	21,395	1,544	38,931	21,899	1,543
* 2013	Prepared meats (1)	13,822	8,550	1,133	14,517	8,642	1,109
2015	Poultry dressing, wholesale	1,182	652	48	1,414	793	48
2021	Creamery butter	1,497	920	45	1,589	951	46
2022	Natural cheese	789	535	32	709	507	28
2023	Condensed, evaporated and dried milk	3,092	1,747	117	3,159	1,727	117
2024	Ice cream and ices	50,011	25,655	2,597	52,064	25,456	2,637
2025	Special dairy products	1,234	859	4	1,289	862	4
2027	Fluid milk	73,344	41,249	2,745	78,257	42,356	2,906
* 2033	Canning and preserving (2)	58,174	36,127	1,929	62,693	38,288	1,940
2035	Pickles and sauces	3,602	2,381	136	3,590	2,255	128
* 2037	Frozen fruits, fruit juices and vegetables (3)	5,885	3,867	100	6,434	4,123	108
* 2041	Flour and meal (4)	4,116	2,758	177	4,281	2,841	176
2042	Prepared animal feeds	18,975	12,195	987	20,742	13,162	997
2043	Cereal preparations	2,684	1,935	17	3,838	2,971	17
2051	Bread and other bakery products	114,519	65,479	5,409	119,303	67,733	5,439
2052	Biscuits and crackers	10,127	5,434	281	13,690	9,080	403
** 2053	Potato chips	7,876	5,131	186	9,100	5,853	208
** 2054	Pretzels	7,647	5,408	183	8,006	5,413	198
2071	Confectionery products	30,308	16,035	1,920	31,205	16,762	1,928
2072	Chocolate and cocoa products	42,900	19,725	385	41,270	18,805	386
2073	Chewing gum	3,288	1,788	188	3,421	1,757	188
2081	Bottled soft drinks	38,619	24,950	1,652	41,835	26,170	1,721
* 2082	Malt liquors (5)	91,325	55,924	2,597	93,355	55,922	2,585
* 2085	Distilled liquors (6)	20,183	9,472	477	20,307	8,718	477
* 2092	Shortening and cooking oils (7)	1,769	1,054	45	1,918	1,092	76
2095	Flavorings	2,854	1,536	102	3,011	1,568	101
2097	Manufactured ice	7,648	2,717	656	7,783	2,712	657
2098	Macaroni and spaghetti	3,890	2,005	76	4,098	1,987	75
* 2099	Food preparations, n.e.c. (8)	41,298	25,590	2,998	44,406	28,054	3,067
21	Total tobacco products	31,167	22,453	525	32,824	22,933	525
* 2121	Cigars (9)	28,630	21,030	343	29,824	21,202	342
2131	Chewing and smoking tobacco	385	211	65	418	226	65
2141	Tobacco stemming and redrying	2,153	1,212	118	2,583	1,505	118

Detail does not necessarily add to total because of rounding.

\* Special code, see footnote for description of industry.

\*\* In the Standard Industrial Classification, pretzels are included in industry 2052, biscuits, crackers and pretzels, and potato chips are included in 2099, food preparations. Since these are important industries to Pennsylvania they have been coded and tabulated as separate industries.

(1) Also includes industry 2014, sausage casing, of which there are three plants. (2) Also includes 2034, dried and dehydrated fruits and vegetables of which there are three plants in the state. (3) Includes industry 2032, cured fish-1 plant and industry 2036, fresh and frozen packaged fish and seafood-3 plants. (4) Includes industry 2045, blended and prepared flour-2 plants. (5) Includes industry 2083, malt-1 plant. (6) Includes industry 2084, wines and brandies-2 plants. (7) Includes industry 2091, leavening compounds-2 plants, and industry 2094, corn products-2 plants. (8) Includes industry 2062, cane sugar refining-2 plants. (9) Includes industry 2111, cigarettes-1 plant.



SIC Industry group		Value of fixed capital, Jan. 1, 1956			Value of fixed capital, Dec. 31, 1956		
		Gross capital	Net capital	Land	Gross capital	Net capital	Land
22	Total textile mill products	429,812	239,558	8,422	439,651	238,634	8,100
2211	Scouring and combing plants	5,551	3,341	127	5,843	3,467	127
2212	Yarn mills, wool, except carpet	8,218	4,750	124	8,220	4,406	104
2213	Woolen and worsted fabrics	13,410	6,201	348	14,078	6,517	350
2216	Dyeing and finishing woolen and worsted goods	4,905	2,750	163	5,078	2,767	163
2222	Thrown yarn	17,750	9,234	186	18,524	9,208	191
2223	Thread mills	1,172	579	23	1,205	570	23
2224	Yarn mills, cotton system	9,096	6,089	47	9,947	6,549	80
2233	Cotton broad-woven fabrics	5,380	3,226	41	5,449	3,142	41
2234	Rayon and related broad-woven fabrics	33,820	20,799	744	34,514	20,173	740
2241	Narrow fabric mills	15,503	9,348	302	16,650	9,865	311
2251	Full-fashioned hosiery	51,906	29,169	850	52,247	28,037	845
2252	Seamless hosiery	13,121	8,382	162	13,913	8,743	159
2253	Knit outerwear mills	26,216	17,742	168	28,055	18,369	186
2254	Knit underwear mills	15,878	8,968	282	16,644	9,152	306
* 2256	Knit fabric mills (10)	19,717	12,534	311	19,869	11,953	320
2261	Finishing textiles, except wool	27,839	15,064	721	28,569	15,072	725
2271	Wool carpets, rugs, and carpet yarns	50,525	27,633	1,093	50,847	26,938	1,093
2273	Carpets and rugs, n.e.c.	10,709	5,630	139	9,456	5,052	150
2274	Hard surfaced floor covering	57,679	29,684	605	60,414	30,695	608
* 2281	Fur-felt hats and hat bodies (11)	11,256	5,103	634	10,971	4,906	617
2291	Felt goods, n.e.c.	1,790	957	46	1,869	903	46
2292	Lace goods	12,169	3,766	780	10,159	3,207	407
2293	Paddings and upholstery filling	880	581	22	890	553	22
2294	Processed textile waste and recovered fabrics	963	501	59	1,035	522	59
2297	Jute	6,485	2,971	169	7,232	3,480	153
2298	Cordage and twine	3,165	1,815	66	3,207	1,750	66
* 2299	Textile goods, n.e.c. (12)	4,710	2,744	211	4,766	2,638	211
23	Total apparel and related products	178,241	125,674	5,010	183,962	125,720	4,930
2311	Men's and boy's suits and coats	22,550	15,821	532	24,244	16,773	530
2312	Suit and coat findings	759	550		757	529	
2321	Men's dress and sport shirts and nightwear	18,259	11,526	368	18,732	11,456	361
2322	Men's and boy's underwear	1,422	1,002	22	1,420	943	15
2323	Men's and boy's neckwear	13,493	10,952	1,314	13,283	9,815	1,314
* 2325	Cloth hats and caps (13)	678	542	9	694	553	9
2327	Separate dress and sport trousers	9,316	6,623	192	9,822	6,824	192
2328	Work shirts	409	271	18	441	283	18
2329	Men's and boy's clothing, n.e.c.	7,239	5,317	99	7,499	5,805	101
2331	Women's and misses' blouses	9,737	7,195	176	9,979	7,032	143
2333	Women's and misses' unit priced dresses	11,626	8,431	113	11,839	8,245	107
2334	Women's and misses' dozen priced dresses	9,332	7,349	306	9,595	7,326	308
2337	Women's and misses' suits, coats, and skirts	3,118	2,388	464	3,150	2,291	457
* 2339	Women's, misses' and junior's outerwear, n.e.c. (14)	2,344	1,795	9	2,358	1,829	9
2341	Women's and children's underwear and nightwear	15,542	10,551	178	16,230	10,706	191
2342	Corsets and allied garments	3,074	1,482	189	3,162	1,457	131
2351	Millinery	424	319		472	362	
2361	Dresses, blouses and skirts, girls', children's and infants'	10,520	8,317	171	11,030	8,450	182
2363	Children's and infants' coats	2,594	2,048	15	2,714	2,078	15
2369	Girls', children's and infants' outerwear, n.e.c.	1,698	1,233	6	1,726	1,199	6
2371	Fur goods	662	465	50	669	453	50

Detail may not add to total because of rounding.

\* Special code, see footnote for description of industry.

(10) Includes industry 2255, knit glove and mitten mills-1 plant and industry 2259, knitting mills, n.e.c.-3 plants.

(11) Includes industry 2282, wool felt hats and hat bodies-3 plants, and industry 2283, straw hats-2 plants. (12) Includes industry 2295, coated fabrics, except rubberized-1 plant. (13) Includes industry 2326, hat and cap materials-2 plants. (14) Includes industry 2338, women's neckwear and scarfs-3 plants.

SIC Industry group	Value of fixed capital, Jan. 1, 1956			Value of fixed capital, Dec. 31, 1956		
	Gross capital	Net capital	Land	Gross capital	Net capital	Land
23 (continued)						
2381 Dress and semi-dress gloves and mittens	2,822	2,703	2	2,816	2,687	2
2382 Work gloves and mittens	663	459	24	666	442	24
2384 Robes and dressing gowns	923	645	9	987	656	9
2385 Raincoats and other waterproof outer garments	605	397		624	388	
2387 Belts	1,590	1,101	68	1,605	1,068	68
2388 Handkerchiefs	385	176	2	390	172	2
* 2389 Apparel, n.e.c. (15)	1,125	776	15	1,184	760	17
2391 Curtains and draperies	4,830	1,983	104	4,928	2,021	104
2392 House furnishings, n.e.c.	3,931	2,766	112	3,996	2,693	112
2393 Textile bags	3,114	2,165	77	3,202	2,150	81
2394 Canvas products	2,536	1,884	131	2,595	1,872	133
2395 Tucking, pleating and hemstitching	115	76		121	74	
2396 Trimming, stamped art goods and art needlework	4,993	2,579	107	5,014	2,679	109
2397 Schiffli-machine embroideries	2,113	1,332	29	2,176	1,220	29
2398 Embroideries, except schiffli-machine	411	319	11	423	311	11
2399 Fabricated textile products, n.e.c.	3,291	2,141	89	3,419	2,118	89
24 Total lumber and wood products	53,032	33,135	4,579	56,147	34,402	4,678
2411 Logging camps and logging contractors	156	108	23	187	138	22
2421 Sawmills and planing mills	18,319	12,310	2,191	19,877	13,147	2,212
* 2422 Veneer mills (16)	640	476	10	636	444	10
2431 Millwork plants	16,793	9,615	1,490	17,703	9,843	1,533
2433 Prefabricated wood products	3,722	3,285	28	3,904	3,364	32
* 2442 Rattan and willow ware (17)	142	86	21	148	91	21
2443 Cigar boxes	1,932	797	17	1,959	820	30
2444 Wooden boxes	2,451	1,456	252	2,462	1,443	253
* 2445 Cooperage (18)	1,843	922	219	1,889	876	222
2491 Wood preserving	1,197	648	43	1,208	610	43
2493 Mirror and picture frames	324	251	14	356	264	14
* 2499 Wood products, n.e.c. (19)	5,511	3,182	272	5,820	3,364	288
25 Total furniture and fixtures	66,595	45,542	1,985	73,866	50,282	1,995
2511 Wood household furniture, except upholstered	16,727	9,509	332	17,047	9,276	509
2512 Wood household furniture, upholstered	7,117	5,541	267	7,380	5,596	267
2514 Metal house furniture	7,790	6,714	110	12,435	11,044	111
2515 Mattresses and bedsprings	5,334	3,743	209	5,464	3,689	220
2521 Wood office furniture	1,436	372	92	1,469	363	92
2522 Metal office furniture	9,301	7,319	253	10,061	7,669	253
2531 Public building furniture	2,057	1,535	63	2,172	1,548	64
2532 Professional furniture	772	521	31	788	527	31
2541 Partitions and fixtures	10,369	6,655	311	10,971	6,840	328
2561 Window and door screens	2,556	1,633	40	2,784	1,702	40
2562 Window shades	307	201	5	314	200	5
2563 Venetian blinds	2,052	1,241	51	2,191	1,276	53
2591 Restaurant furniture	116	101	7	115	96	7
2599 Furniture and fixtures, n.e.c.	662	458	15	677	458	15

Detail may not add to total because of rounding.

\* Special code, see footnote for description of industry.

(15) Includes industry 2383, suspenders, garters and related products-2 plants and industry 2386, leather and sheeplined clothing-1 plant. (16) Includes industry 2432, plywood plants-1 plant. (17) Includes industry 2441, fruit and vegetable baskets-1 plant. (18) Includes industry 2424, cooperage stock mills-3 plants. (19) Includes industry 2492, lasts and related products-2 plants.



SIC Industry group	Value of fixed capital, Jan. 1, 1956			Value of fixed capital, Dec. 31, 1956		
	Gross capital	Net capital	Land	Gross capital	Net capital	Land
26 Total paper, pulp, and products	371,092	212,903	7,583	402,758	230,065	8,019
2612 Paper and board mills	148,098	79,092	3,511	162,475	87,290	3,715
2613 Building paper and board mills	4,011	3,205	28	7,725	6,498	28
2641 Paper, coating and glazing	19,706	10,968	270	21,036	11,395	333
2651 Envelopes	2,831	1,856	86	2,923	1,899	88
2661 Paper bags	7,492	4,502	214	8,118	4,701	296
2671 Paperboard boxes	78,352	47,626	1,641	81,696	48,821	1,637
2674 Fiber cans, tubes, and drums	3,229	2,201	95	3,469	2,325	94
2691 Die-cut paper and board	963	600	85	989	596	85
2693 Wallpaper	1,912	922	56	1,979	938	56
2699 Converted paper products, n.e.c.	104,497	61,932	1,597	112,347	65,601	1,686
27 Total printing and publishing	314,487	192,037	13,928	327,195	198,106	14,087
2711 Newspapers	115,398	73,114	7,195	119,127	74,974	7,258
2721 Periodicals	58,087	30,139	2,684	58,491	30,223	2,777
2731 Books: Publishing, publishing and printing	15,820	9,556	448	16,142	9,536	400
2732 Book printing	20,976	13,351	289	22,235	14,420	291
2741 Miscellaneous publishing	2,500	1,335	27	2,567	1,285	27
2751 Commercial printing	45,451	29,184	1,781	49,299	31,456	1,799
2761 Lithography	27,630	17,224	867	29,337	17,768	882
2771 Greeting cards	881	679	17	919	688	17
* 2781 Bookbinding (20)	3,535	2,625	105	3,760	2,790	100
2782 Blankbookmaking and paper ruling	2,078	1,410	52	2,147	1,429	52
2783 Library and loose-leaf binder and manufacturing	3,094	2,307	8	3,158	2,214	6
2791 Typesetting	6,222	3,779	90	6,570	3,833	110
2792 Engraving and plate printing	3,910	1,851	208	4,095	1,897	208
2793 Photoengraving	6,493	4,172	111	6,796	4,245	111
2794 Electrotyping and stereotyping	2,414	1,311	48	2,553	1,347	48
28 Total chemicals and products	522,261	263,336	14,040	556,412	268,336	14,358
* 2819 Inorganic chemicals, n.e.c. (21)	30,663	16,264	952	33,080	16,751	965
2822 Intermediates, dyes, color lakes and toners	3,420	2,567	66	3,749	2,616	67
* 2823 Plastics materials (22)	136,272	50,677	1,235	140,487	46,934	1,243
2826 Explosives	14,068	5,700	186	14,598	5,964	184
2829 Inorganic chemicals	115,384	60,127	3,394	122,882	59,372	3,403
2831 Biological products	2,316	1,466	65	2,725	1,787	65
* 2834 Pharmaceutical preparations (23)	79,835	50,252	2,150	89,877	55,217	2,296
2841 Soap and glycerin	7,742	3,638	293	7,748	3,470	260
2842 Cleaning and polishing preparations	4,169	2,952	220	4,478	3,058	218
2843 Sulfonated oils and assistants	4,024	2,518	152	4,559	2,863	158
2851 Paints, varnishes, lacquers, japans and enamels	35,894	19,531	1,637	37,638	19,458	1,640
2852 Inorganic color pigments	10,750	4,886	264	11,332	5,109	264
2853 Whiting and fillers	1,417	711	98	1,524	740	101
2861 Hardwood distillation	480	251	8	467	231	8
2865 Gum naval stores	4,988	2,688	54	5,207	2,641	54
* 2871 Fertilizers (24)	10,576	5,000	620	11,033	4,991	629
* 2884 Vegetable oil mills (25)	1,468	755	47	1,615	780	47
2886 Grease and tallow	5,859	3,375	512	5,705	3,429	514
2891 Printing ink	3,544	1,614	359	3,695	1,644	359
2893 Toilet preparations	7,378	6,216	314	7,455	6,199	314
2894 Glue and gelatin	2,833	1,414	83	2,846	1,325	83
2896 Compressed and liquified gases	23,663	12,089	339	26,911	14,198	342
2897 Insecticides and fungicides	1,224	842	50	1,309	843	63
* 2899 Chemical products, n.e.c. (26)	14,294	7,803	944	15,494	8,718	1,083

Detail may not add to total because of rounding.

\* Special code, see footnote for description of industry.

(20) Includes industry 2789, miscellaneous work relating to bookbinding-1 plant. (21) Includes industry 2811, sulphuric acid-2 plants and industry 2812, alkalies and chlorine-1 plant. (22) Includes industry 2825, rayon acetate, noncellulosic synthetic fibres and related products-2 plants. (23) Includes industry 2833, medicinal chemicals-1 plant. (24) Includes industry 2872, fertilizers, (mixing only)-4 plants. (25) Includes industry 2887, fatty acids-2 plants; industry 2889, animal oils-1 plant and industry 2892, essential oils-1 plant. (26) Includes industry 2821, cyclic (coal tar) crudes-3 plants and industry 2895, carbon black-3 plants.

SIC Industry group	Value of fixed capital, Jan. 1, 1956			Value of fixed capital, Dec. 31, 1956		
	Gross capital	Net capital	Land	Gross capital	Net capital	Land
29 Total petroleum and coal products	796,902	389,053	18,913	834,744	394,866	19,660
2911 Petroleum refining	572,891	298,301	11,222	608,457	310,900	11,907
* 2931 Beehive coke ovens (27)	192,198	77,567	5,801	192,857	59,575	5,839
2951 Paving mixtures and blocks	6,947	4,248	172	7,372	4,045	171
2952 Roofing felts and coatings	8,504	3,388	540	9,226	3,796	540
2992 Lubricants	16,362	5,548	1,178	16,832	6,550	1,204
30 Total rubber products	97,339	57,587	712	105,361	59,229	867
3011 Tires and inner tubes	68,450	41,985	273	73,314	42,323	270
3021 Rubber footwear	1,589	1,468	56	1,631	1,468	115
* 3099 Rubber industries, n.e.c. (28)	27,301	14,135	384	30,415	15,438	482
31 Total leather and leather goods	72,422	45,861	1,574	74,809	45,614	1,576
3111 Leather tanning and finishing	20,367	7,311	965	20,677	7,171	937
3121 Industrial leather belting	605	388	15	592	379	15
3131 Footwear cut stock	2,168	987	45	2,244	957	46
3141 Footwear, except rubber	40,987	31,751	331	42,725	31,771	344
3142 House slippers	1,536	1,165		1,585	1,192	
3161 Luggage	4,026	2,478	18	4,175	2,356	18
3171 Handbags and purses	1,243	923	76	1,289	924	87
3172 Small leather goods	781	419	83	805	428	83
3192 Saddlebags, harness and whips	202	126	14	206	126	19
* 3199 Leather goods, n.e.c. (29)	507	313	28	512	310	28
32 Total stone, clay, and glass products	557,082	281,458	18,675	607,715	310,942	20,069
3211 Flat glass	44,234	18,077	819	48,382	20,189	823
3221 Glass containers	40,269	18,834	378	44,178	20,727	395
3229 Pressed and blown glassware, n.e.c.	34,427	15,412	619	37,870	17,242	640
3231 Products of purchased glass	37,532	16,631	608	39,294	16,409	639
3241 Cement, hydraulic	167,579	86,833	6,919	189,038	104,732	8,035
3251 Brick and hollow tile	24,416	13,249	816	26,755	14,165	869
3253 Floor and wall tile	10,459	6,966	177	9,729	6,628	162
3254 Sewer pipe	4,427	2,025	320	4,667	2,161	320
3255 Clay refractories	28,727	12,892	647	31,448	14,955	683
3259 Structural clay products, n.e.c.	1,309	532	49	1,417	587	40
* 3262 Vitreous china food utensils (30)	11,462	6,284	542	11,871	6,251	549
3264 Porcelain electrical supplies	4,192	1,993	47	4,335	1,966	50
3269 Pottery products, n.e.c.	2,341	1,362	57	2,450	1,316	57
3271 Concrete products	32,433	20,343	1,727	34,370	20,580	1,779
3272 Gypsum products	3,984	1,483	378	4,822	2,235	378
3274 Lime	22,783	12,407	1,882	24,136	12,313	1,898
* 3275 Mineral wool (31)	3,091	2,384	26	4,099	3,290	27
*** 3281 Cut-stone and stone products	2,702	1,714	373	2,780	1,681	406
3291 Abrasive products	8,041	3,959	183	8,958	4,476	196
3292 Asbestos products	13,728	6,825	452	15,012	7,549	479
3293 Gaskets and asbestos insulation	14,764	8,666	420	15,720	9,091	413
3295 Minerals-ground or treated	13,662	7,467	713	14,335	7,285	706
3297 Nonclay refractories	30,019	14,746	483	31,543	14,745	484
3298 Statuary and art goods	499	376	41	506	372	41

Detail may not add to total because of rounding.

\* Special code, see footnote for description of industry.

\*\*\* Establishments engaged in quarrying slate and then manufacturing finished slate products are tabulated in mineral industry 1414, dimension slate.

(27) Includes industry 2932, byproduct coke ovens-4 plants and industry 2999, products of petroleum and coal - 2 plants. (28) Includes industry 3031, reclaimed rubber-1 plant (29) Includes industry 3151, leather dress gloves-1 plant and industry 3152, leather work gloves-2 plants. (30) Includes industry 3261, vitreous plumbing fixtures-2 plants and industry 3265, china decorating for the trade-3 plants. (31) Includes industry 3299, non-metallic mineral products, n.e.c.-1 plant.

SIC Industry group		Value of fixed capital, Jan. 1, 1956			Value of fixed capital, Dec. 31, 1956		
		Gross capital	Net capital	Land	Gross capital	Net capital	Land
33	Total primary metal industries	3,273,918	1,422,983	96,060	3,479,386	1,432,693	97,860
3311	Blast furnaces	121,355	49,709	2,668	134,005	54,714	2,757
3312	Steel works and rolling mills	2,455,935	1,032,235	52,816	2,611,797	1,026,124	53,566
3321	Gray-iron foundries	40,456	19,363	2,298	42,570	20,021	2,311
3322	Malleable-iron foundries	6,322	3,332	177	6,913	3,765	178
3323	Steel foundries	68,091	28,797	3,362	74,506	32,719	3,367
* 3333	Primary zinc (32)	61,166	23,597	1,154	63,625	24,756	1,158
3341	Secondary nonferrous metals	14,463	6,976	695	15,909	7,432	706
3351	Copper rolling and drawing	18,055	11,401	759	19,718	11,996	868
3352	Aluminum rolling and drawing	43,477	24,980	541	44,692	24,061	609
3359	Nonferrous metal rolling, n.e.c.	10,442	6,048	61	13,165	7,725	157
3361	Nonferrous foundries	32,402	18,563	1,136	33,729	18,955	1,240
3391	Iron and steel forgings	39,389	14,925	802	43,173	17,247	793
3392	Wire drawing	26,340	12,294	793	29,185	14,354	797
3393	Welded and heavy-riveted pipe	249,773	127,015	27,109	249,277	119,444	27,454
* 3399	Primary metals, n.e.c. (33)	86,254	43,749	1,691	97,123	49,379	1,901
34	Total fabricated metal products	521,078	271,911	16,874	545,707	281,294	17,082
3411	Tin cans and other tinware	36,968	24,170	612	39,016	24,468	612
3421	Cutlery	1,535	741	24	1,520	719	24
3422	Edge tools	682	403	58	696	395	58
3423	Hand tools	6,639	3,458	409	7,026	3,529	406
3424	Files	2,565	1,244	56	2,702	1,345	56
3425	Hand saws and saw blades	9,365	5,185	594	8,130	4,192	475
3429	Hardware, n.e.c.	15,520	7,154	616	16,185	7,315	610
3431	Metal plumbing fixtures	18,506	10,970	405	19,624	11,350	399
3432	Oil burners, domestic and industrial	6,072	2,695	178	6,218	2,520	178
3439	Heating and cooking apparatus, n.e.c.	27,872	16,083	690	29,861	16,927	661
3441	Structural and ornamental products	86,128	40,728	4,984	90,892	42,506	4,995
3442	Metal doors, sash and trim	11,743	8,013	391	13,713	9,199	511
3443	Boiler shop products	47,291	23,362	1,510	49,445	23,771	1,540
3444	Sheet metal work	15,825	10,876	800	16,914	11,346	768
3461	Vitreous-enameled products	6,952	3,588	66	6,972	3,873	69
3463	Metal stampings	54,173	25,624	703	57,621	26,484	716
3465	Enameling and lacquering	7,008	6,704	28	7,066	6,669	28
3466	Galvanizing	2,209	1,398	160	2,402	1,488	160
3467	Engraving on metal	855	565	19	912	574	19
3468	Plating and polishing	7,671	5,239	196	8,117	5,249	200
3471	Lighting fixtures	14,730	10,415	474	15,383	10,497	464
3481	Nails and spikes	2,655	156	390	2,668	128	390
3489	Wirework, n.e.c.	27,870	14,686	675	29,395	14,955	687
3491	Metal barrels, drums and pails	3,567	2,077	93	3,755	2,183	93
3493	Steel springs	9,379	5,108	155	10,301	5,648	210
3494	Bolts, nuts, washers and rivets	72,436	29,788	2,062	72,989	31,902	2,187
3495	Screw-machine products	6,709	4,208	162	6,904	4,252	185
* 3499	Fabricated metal products, n.e.c. (34)	18,156	7,276	366	19,281	7,812	383
35	Total machinery, except electrical	675,223	357,395	17,584	718,612	375,417	18,394
3511	Steam engines and turbines	77,671	39,583	898	80,862	38,755	898
3519	Internal combustion engines	11,328	4,870	136	11,531	4,757	138
* 3522	Farm machinery (35)	35,182	24,952	679	36,845	23,168	701
3531	Construction and mining machinery	45,637	23,923	1,793	48,434	25,528	1,723
3532	Oilfield machinery and tools	17,851	8,808	792	16,925	8,197	744
3541	Machine tools	17,124	8,048	345	18,429	8,712	354
3542	Metalworking machinery	55,783	27,160	1,438	65,132	34,622	1,565
3544	Special dies and tools, die sets, jigs, and fixtures	13,863	8,788	333	15,543	9,329	368

Detail may not add to total because of rounding.

\* Special code, see footnote for description of industry.

(32) Includes industry 3331, primary copper-2 plants; industry 3332, primary lead-1 plant; industry 3334, primary aluminum-2 plants, and industry 3339, primary non-ferrous metals-3 plants. (33) Includes industry 3313, electro-metallurgical products-2 plants. (34) Includes industry 3464, powder metallurgy, 2 plants; industry 3492, safes and vaults-1 plant; industry 3496, collapsible tubes-2 plants and industry 3497, metal foil-1 plant. (35) Includes industry 3521, tractors-2 plants.



SIC Industry group	Value of fixed capital, Jan. 1, 1956			Value of fixed capital, Dec. 31, 1956		
	Gross capital	Net capital	Land	Gross capital	Net capital	Land
35 (continued)						
3545 Attachments and accessories for machine tools	11,833	6,383	273	13,030	6,957	317
3551 Food-products machinery	7,363	3,886	251	7,634	3,865	264
3552 Textile machinery	49,200	26,427	1,037	50,202	26,298	1,421
3553 Woodworking machinery	3,452	1,651	55	3,662	1,808	56
3554 Paper industries machinery	4,178	1,999	88	5,312	2,908	101
3555 Printing-trades machinery	8,784	4,022	415	9,223	4,119	415
3559 Special industry machinery	27,726	15,218	944	29,907	15,914	958
3561 Pumps and compressors	19,553	8,186	511	20,672	8,688	550
3562 Elevators and escalators	2,306	1,159	69	2,460	1,199	69
3563 Conveyors	17,824	10,447	426	19,093	10,328	426
3564 Blowers and fans	2,475	1,524	147	2,592	1,647	151
3565 Industrial trucks and tractors	18,383	13,391	123	19,096	13,149	123
3566 Power transmission equipment	35,927	16,675	1,246	38,802	18,133	1,266
*3567 Industrial furnaces and ovens (36)	6,059	2,580	710	7,516	3,941	668
3569 General industrial machinery, n.e.c.	16,298	9,388	434	17,561	9,521	448
*3571 Computing and related machines (37)	970	813	6	2,384	2,027	6
3576 Scales and balances	209	153	12	242	177	12
*3582 Laundry and dry cleaning machinery (38)	5,568	3,064	162	5,499	2,987	162
3583 Sewing machines	872	392	15	901	358	15
3585 Refrigeration machinery	40,371	22,368	568	38,641	23,227	580
3586 Measuring and dispensing pumps	2,837	1,499	58	3,213	1,630	62
*3589 Service and household machines, n.e.c. (39)	1,906	1,016	93	2,015	1,058	98
3591 Valves and fittings	43,294	22,341	1,140	46,991	24,577	1,319
3592 Fabricated pipe and fittings	5,996	3,125	394	6,524	3,340	399
3593 Ball and roller bearings	31,781	11,170	284	33,432	10,948	289
3594 Industrial patterns and molds	4,247	2,982	284	4,712	3,247	291
3599 Machine shops	31,374	19,405	1,427	33,598	20,297	1,438
36 Total electrical machinery	520,402	317,430	12,886	563,488	336,793	13,432
3611 Wiring devices and supplies	45,080	28,302	1,387	48,737	29,794	1,412
3612 Carbon and graphite products	6,532	4,080	60	7,306	4,630	71
3613 Electrical measuring instruments	13,939	9,439	638	15,991	10,899	641
3614 Motors and generators	32,711	20,215	583	37,639	21,410	591
3615 Transformers	51,417	31,063	3,102	56,049	32,774	3,333
3616 Electrical distribution and control apparatus	130,721	64,970	3,231	134,261	65,361	3,426
3617 Electrical welding apparatus	8,079	4,244	155	8,297	4,115	155
3619 Electrical industrial apparatus, n.e.c.	12,186	8,094	186	12,808	8,243	197
3621 Electrical appliances	17,917	11,110	620	19,442	11,506	555
3631 Insulated wire and cable	4,001	1,630	167	3,897	1,477	167
3641 Engine electrical equipment	2,632	1,957	85	2,814	2,013	109
3651 Electric lamps (bulbs)	12,731	7,841	100	13,307	7,759	97
3661 Radios and related products	46,272	32,835	1,127	48,689	33,373	1,138
3662 Electron tubes	87,841	68,461	595	103,347	79,222	688
3663 Phonograph records	2,692	1,832	39	2,801	1,795	45
*3669 Communication equipment (40)	9,480	4,329	249	9,945	4,585	249
*3691 Storage batteries (41)	30,070	13,981	467	31,670	14,795	435
*3699 Electrical products, n.e.c. (42)	6,104	3,046	96	6,487	3,041	123
37 Total transportation equipment	419,651	203,546	10,320	420,258	202,860	8,976
3713 Truck and bus bodies	22,534	10,406	867	23,635	11,123	867
3715 Truck trailers	4,374	3,436	47	4,684	3,546	48
3716 Automobile trailers	805	719		944	858	
3717 Motor vehicles and parts	143,734	77,810	2,688	154,496	82,645	2,665
3721 Aircraft	8,958	5,662	100	10,155	6,245	110
3722 Aircraft engines	20,773	10,979	145	22,366	11,366	139
3729 Aircraft equipment, n.e.c.	18,039	10,791	277	19,209	10,511	324
3731 Ship building and repairing	30,125	10,255	1,783	30,357	9,999	1,787
3732 Boat building and repairing	1,074	830	20	1,141	849	20
3741 Locomotives and parts	67,149	19,252	2,614	48,298	11,749	1,211
3742 Railroad and street cars	99,667	52,092	1,707	101,955	52,052	1,732
3799 Transportation equipment, n.e.c.	2,421	1,315	73	3,019	1,917	73

Detail may not add to total because of rounding.

\* Special code, see footnote for description of industry

(36) Includes industry 3568, mechanical stokers-3 plants. (37) Includes industry 3579, office and store machinery-2 plants. (38) Includes industry 3581, domestic laundry equipment-2 plants. (39) Includes industry 3584, vacuum cleaners-3 plants. (40) Includes industry 3664, telephone and telegraph equipment-2 plants. (41) Includes industry 3692, primary batteries (dry and wet)-2 plants. (42) Includes industry 3693, X-ray and therapeutic apparatus-2 plants.

SIC Industry group		Value of fixed capital, Jan. 1, 1956			Value of fixed capital, Dec. 31, 1956		
		Gross capital	Net capital	Land	Gross capital	Net capital	Land
38	Total instruments and related products	57,928	34,260	1,707	62,610	36,582	1,742
3811	Scientific instruments	2,723	1,538	17	3,107	1,751	21
3821	Mechanical measuring instruments	25,263	15,001	640	28,700	17,172	682
3831	Optical instruments and lenses	1,563	1,186	127	1,845	1,271	114
3841	Surgical and medical instruments	869	619	72	912	634	72
3842	Surgical appliances and supplies	8,134	5,832	231	8,551	5,962	231
3843	Dental equipment and supplies	5,503	2,770	159	5,710	2,803	159
3851	Ophthalmic goods	4,766	3,005	282	4,557	2,907	284
3861	Photographic equipment and supplies	1,805	1,323	76	1,899	1,385	76
*3871	Watches and clocks (43)	7,304	2,986	102	7,330	2,696	102
39	Total miscellaneous manufactures	116,945	70,560	2,920	128,495	77,529	2,947
*3911	Jewelry (44)	1,060	771	70	1,080	761	70
3913	Lapidary work	68	59		68	59	
3914	Silverware and plated ware	312	166	1	319	164	1
*3932	Organs (45)	2,516	1,310	73	2,918	1,581	82
3941	Games and toys	13,147	8,868	254	16,226	10,911	254
3942	Dolls	75	49	7	81	49	7
3943	Children's vehicles	1,709	412	66	1,735	400	66
3949	Sporting and athletic goods	6,752	5,043	102	6,964	5,029	93
*3952	Lead pencils and crayons (46)	3,279	1,958	70	3,524	2,119	71
3953	Hand stamps and stencils	1,991	1,226	49	2,082	1,264	49
3961	Costume jewelry	134	85	7	137	83	7
3962	Feathers, plumes, and artificial flowers	1,177	900	46	1,216	903	51
3963	Buttons	260	214	7	272	216	7
3964	Needles, pins and fasteners	11,669	5,679	131	12,125	5,817	131
3971	Plastic products, n.e.c.	37,607	22,813	484	43,149	26,919	501
3981	Brooms and brushes	1,944	961	141	2,059	1,025	138
3982	Cork products	5,710	3,382	64	5,798	3,195	62
3984	Candles	468	203		400	182	
3985	Fireworks and pyrotechnics	201	116	12	209	125	14
3987	Lamp shades	613	445	12	662	469	12
3988	Morticians' goods	8,138	4,136	597	8,442	4,167	599
3993	Signs and advertising displays	6,340	4,656	202	6,645	4,783	198
3994	Hair work	788	382	58	836	393	58
3995	Umbrellas, parasols and canes	1,840	815	205	1,884	785	205
*3999	Miscellaneous products, n.e.c. (47)	9,149	5,911	263	9,664	6,130	271
* 19	Total ordnance and accessories (48)	19,214	6,488	687	19,895	6,695	687
	Total mineral industries	773,250	471,003	165,158	795,775	476,092	155,625
1111	Anthracite coal	165,442	99,995	50,489	166,171	98,615	48,333
1112	Anthracite stripping	5,552	4,269	488	5,190	3,953	377
1119	Anthracite reclaimed from streams	6,703	6,454	6	6,761	6,335	6
1211	Bituminous coal	494,554	306,849	103,548	514,361	314,216	96,251
1414	Dimension slate	2,085	1,041	420	2,125	1,003	402
1417	Dimension sandstone	2,328	2,140	68	2,358	2,142	68
*1419	Dimension stone, n.e.c. (49)	2,784	2,503	114	2,852	2,526	114
1422	Crushed and broken limestone	49,369	27,505	4,512	49,602	26,404	4,729
1426	Crushed and broken trap rock	3,483	1,925	181	3,753	2,154	181
1427	Crushed and broken sandstone	2,684	1,853	305	2,870	1,901	287
*1429	Crushed and broken stone, n.e.c. (50)	4,091	2,427	148	4,361	2,554	102
1445	Sand and gravel industry	20,681	10,614	3,130	21,738	10,773	3,008
1453	Fire clay industry	2,166	1,071	840	2,443	1,231	900
1459	Clay, ceramic and refractory minerals, n.e.c.	997	769	166	1,243	929	156
*1499	Miscellaneous mining, n.e.c. (51)	10,331	1,588	745	9,950	1,356	711

Detail may not add to total because of rounding.

\* Special code, see footnote for description of industry.

(43) Includes industry 3872, watch cases-1 plant. (44) Includes industry 3912, jewelry findings-2 plants.

(45) Includes industry 3931, pianos-2 plants; industry 3933, piano and organ parts-4 plants, and industry 3939, musical instruments, n.e.c.-2 plants. (46) Includes industry 3951, pens and mechanical pencils-2 plants.

(47) Includes industry 3954, artists' materials-1 plant; industry 3955, carbon paper and inked ribbons-2 plants; industry 3991, beauty and barbershop equipment-2 plants; industry 3992, furs, dressed and dyed-2 plants and industry 3997, soda-fountain and bar equipment-2 plants. (48) Includes industries 1911, guns, howitzers, mortars and related products-2 plants; industry 1921, artillery ammunition over 30 mm -4 plants; industry 1929, ammunition, n.e.c. - 1 plant; industry 1931, tanks and tank components-2 plants; industry 1951, small arms, 30 mm and under-2 plants; 1961, small arms ammunition, 30 mm and under-1 plant, and 1999, ordnance and accessories, n.e.c.-4 plants. (49) Includes industry 1412, dimension slate-2 plants and 1416, dimension trap rock -

3 plants. (50) Includes industry 1423, crushed and broken granite-1 plant and 1424, crushed and broken slate-1 plant. (51) Includes industry 1401, iron ores-2 plants; 1460, natural abrasives, except sand-1 plant and 1496, talc, soapstone and pyrophyllite industry-1 plant.

TABLE 3: CAPITAL INVESTMENT FOR MANUFACTURING AND MINERAL INDUSTRIES  
BY COUNTY, DECEMBER 31, 1956  
(in thousands of dollars)

County	Manufacturing industries			Mineral industries		
	Gross capital	Net capital	Land	Gross capital	Net capital	Land
Total	\$10,370,108	\$5,147,448	\$289,293	\$795,775	\$476,091	\$155,625
Adams	21,260	14,597	416	3,323	1,629	943
Allegheny	1,968,748	820,469	78,501	53,891	35,780	3,902
Armstrong	60,213	25,568	856	12,574	7,704	3,860
Beaver	618,496	303,316	8,322	4,546	3,187	294
Bedford	2,685	1,839	89	1,001	873	25
Berks	244,080	136,317	5,933	3,867	2,954	494
Blair	56,643	30,307	749	1,497	761	206
Bradford	17,280	9,673	230	85	43	105
Bucks	643,704	292,215	27,041	11,294	7,495	1,807
Butler	118,424	68,531	1,685	10,236	5,519	450
Cambria	220,151	75,618	5,007	58,342	36,448	13,829
Cameron	6,877	3,771	22	216	113	-
Carbon	42,869	13,921	537	10,793	8,477	471
Centre	24,743	12,808	1,368	10,312	6,174	455
Chester	146,944	93,231	3,637	2,815	1,937	147
Clarion	10,434	6,066	386	12,546	7,507	923
Clearfield	31,089	17,583	440	31,981	23,020	2,343
Clinton	46,608	20,793	272	2,550	1,748	38
Columbia	56,756	27,114	1,161	3,501	2,181	23
Crawford	89,201	31,345	879	187	168	55
Cumberland	54,887	36,214	823	1,244	649	31
Dauphin	168,174	66,740	2,879	1,355	568	197
Delaware	531,405	266,947	12,722	2,116	1,059	137
Elk	56,002	29,495	848	2,198	1,689	21
Erie	260,221	128,635	8,635	219	93	29
Fayette	40,793	21,440	835	32,032	13,397	3,357
Forest	3,086	1,506	40	209	132	10
Franklin	38,253	19,540	626	1,024	559	44
Fulton	198	189	11	672	514	27
Greene	1,871	1,201	125	89,188	50,303	26,407
Huntingdon	13,881	7,333	152	3,483	1,423	126
Indiana	12,708	6,974	211	33,295	15,947	16,868
Jefferson	17,828	8,550	253	5,404	3,941	256
Juniata	1,858	902	93	109	70	-
Lackawanna	83,899	49,266	2,406	25,514	21,428	1,482
Lancaster	233,763	139,622	4,284	10,468	8,171	214
Lawrence	96,135	46,651	3,220	12,096	7,932	1,746
Lebanon	52,493	24,169	951	12,293	2,216	605
Lehigh	172,038	107,932	4,956	540	314	19
Luzerne	111,386	68,799	2,542	83,959	43,970	40,881
Lycoming	69,095	34,080	1,524	1,872	1,172	83
McKean	49,430	24,691	597	457	368	1,950
Mercer	151,313	77,866	2,485	3,006	1,906	63
Mifflin	59,747	19,125	564	2,276	1,163	62
Monroe	13,652	8,293	344	463	237	110
Montgomery	434,933	241,832	7,212	7,553	4,736	1,904
Montour	5,302	2,407	58	272	183	5
Northampton	419,139	171,670	10,224	5,130	2,502	616
Northumberland	71,512	41,745	1,017	8,534	5,162	966
Perry	1,471	961	88	160	84	-
Philadelphia	1,754,651	973,322	59,289	822	113	144
Pike	374	221	43	-	-	-
Potter	1,984	1,458	54	143	92	-
Schuylkill	57,991	31,805	914	43,721	24,834	5,110
Snyder	3,920	2,817	140	376	314	22
Somerset	7,467	5,018	419	23,742	17,616	1,136
Sullivan	3,086	1,625	275	-	-	-
Susquehanna	8,220	4,629	90	7	6	-
Tioga	14,038	7,559	115	482	478	15
Union	3,620	2,204	145	565	327	4
Venango	58,756	25,878	1,003	4,630	3,158	76
Warren	39,055	18,019	709	220	84	11
Washington	171,519	92,574	4,423	105,007	61,490	18,536
Wayne	5,598	3,918	209	455	320	1
Westmoreland	321,149	160,451	7,371	28,236	19,789	1,590
Wyoming	2,941	1,361	72	440	285	121
York	262,066	154,731	5,774	4,233	1,582	74

Detail may not add to total because of rounding.

Source: Pennsylvania Department of Internal Affairs, Bureau of Statistics.



APPENDIX A - ITEM 4 ON FIXED CAPITAL, CAPITAL EXPENDITURES, AND RENTALS USED IN  
THE 1956 INDUSTRIAL CENSUS AND THE INSTRUCTIONS TO THE RESPONDENTS

1956 CENSUS OF MANUFACTURING IN PENNSYLVANIA

INSTRUCTIONS:

ITEM 4 FIXED CAPITAL, CAPITAL EXPENDITURES, AND RENTALS		Beginning of year, 1956	End of year, 1956
A. Value of fixed capital		(omit cents)	
1. Undepreciated value of plant, machinery, and equipment [excluding land]		\$	\$
2. Depreciation reserve		\$	\$
3. Depreciated value of plant, machinery, and equipment [excluding land] (1 minus 2)		\$	\$
4. Value of land		\$	\$
5. Depreciated value of fixed capital (3 plus 4)		\$	\$
B. Total capital expenditures for plant, machinery, and equipment during 1956		(omit cents)	
		\$	
C. Annual rentals paid for plant, machinery, and equipment during 1956		\$	

Item 4. In part A, "Value of plant, machinery, and equipment" refers to the aggregate total of balance sheet values for all fixed assets of this manufacturing establishment for which depreciation accounts are ordinarily maintained. In part B, capital expenditures are those costs which are chargeable to this establishment's fixed assets accounts. They include major alterations and capitalized improvements, such as new elevators. Do not include cost of maintenance and repairs charged as current operating expense. Include purchases from the U. S. Government. In part C, if the manufacturing plant, or any property, machinery, or equipment is not owned by the respondent, state the total annual rentals paid for its use.

1956 CENSUS OF MINERAL INDUSTRIES IN PENNSYLVANIA

INSTRUCTIONS:

ITEM 4 FIXED CAPITAL, CAPITAL EXPENDITURES, AND RENTALS		Beginning of year, 1956	End of year, 1956
A. Value of fixed capital		(omit cents)	
1. Undepreciated value of plant, machinery, and equipment [excluding land and value of mineral deposits]		\$	\$
2. Depreciation reserve		\$	\$
3. Depreciated value of plant, machinery, and equipment [excluding land and value of mineral deposits] (1 minus 2)		\$	\$
4. Value of land and mineral deposits		\$	\$
5. Depreciated value of fixed capital (3 plus 4)		\$	\$
B. Total capital expenditures for plant, machinery, and equipment during 1956, including development and exploration of mineral property during 1956		\$	
C. Annual rentals paid for land, mineral rights, plant, machinery, and equipment during 1956		\$	

Item 4. In Part A, "Value of plant, machinery, and equipment" refers to the aggregate total of balance sheet values for all fixed assets of this establishment for which depreciation accounts are ordinarily maintained. In part B, capital expenditures are those costs which are chargeable to this establishment's fixed assets accounts. They include major alterations and capitalized improvements. Do not include cost of maintenance and repairs charged as current operating expense. Include purchases from the U. S. Government. In part C, if the land, mineral rights, plant, machinery, or equipment is not owned by the respondent, state the total annual rentals paid for its use.

APPENDIX B -- QUESTIONNAIRE USED IN THE 1956 QUALITY CONTROL CHECK, INSTRUCTIONS  
TO THE FIELDMAN, AND A SUMMARY OF THE RESULTS

FOLLOW-UP CHECK OF 1956 INDUSTRIAL CENSUS OF PENNSYLVANIA

Co. \_\_\_\_\_ City \_\_\_\_\_ Code \_\_\_\_\_ No. \_\_\_\_\_

**ITEM 1 NAME, PHYSICAL LOCATION, AND MAILING ADDRESS OF ESTABLISHMENT**

Name and address of person who should be contacted if questions arise regarding report.

A. Name of establishment .....

B. Physical location of establishment (may differ from mailing address)

1. Street and number .....

2. City, boro, or twp. .... 3. County.....

C. Office mailing address (if different from B)

Telephone Number \_\_\_\_\_

1. Street and number .....

2. City, boro, or twp. .... 3. County.....

**ITEM 4 FIXED CAPITAL, CAPITAL EXPENDITURES, AND RENTALS**

A. Value of fixed capital

1. Undepreciated value of plant, machinery, and equipment [excluding land] .....

2. Depreciation reserve .....

3. Depreciated value of plant, machinery, and equipment [excluding land] (1 minus 2) .....

4. Value of land .....

5. Depreciated value of fixed capital (3 plus 4) .....

Beginning of year, 1956	End of year, 1956
(omit cents)	
\$	\$
\$	\$
\$	\$
\$	\$
\$	\$

1. Were book records kept for the values reported under Item 4? Yes or No

(a) A-1 Undepreciated value of plant, machines, and equipment

(b) A-2 Depreciation reserve

(c) A-4 Value of land

2. If book records were not kept for items A-1, A-2, or A-4, please explain how you obtained the values which you reported.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

3. Was the value of land reported under Item A-1? Yes No

4. Please explain if values were not reported or if there were any apparent inconsistencies. (For example, decreasing depreciation reserve.)

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## APPENDIX B (Continued)

## ITEM 5 AVERAGE EMPLOYMENT AND TOTAL WAGES AND SALARIES IN 1956

	Total all employees (1)	Production and related workers		All other employees	
		Male (2)	Female (3)	Male (4)	Female (5)
A. Average number of employees (see instructions for method of calculation) ...					
B. Total wages and salaries paid during 1956 (omit cents)	\$	\$	\$	\$	\$

1. How did you arrive at the figures reported under 5-A? \_\_\_\_\_

\_\_\_\_\_

2. How did you arrive at the figures reported under Item 5-B? \_\_\_\_\_

\_\_\_\_\_

## ITEM 6 VALUE OF PRODUCTION, CONTRACT WORK, AND MISCELLANEOUS RECEIPTS DURING 1956

C. Miscellaneous receipts for repair work, sales of scrap, installation of own products, and net return from resale of products which this establishment has not further manufactured \$ \_\_\_\_\_

## ITEM 7 COST OF MATERIALS, FUEL, ELECTRIC ENERGY, CONTRACT WORK, ETC.

(omit cents)

A. Materials, parts, components, containers, supplies, etc. consumed \$ \_\_\_\_\_

1. (Only for manufacturing plants reporting an answer to Part 6-C) Did your company purchase and resell any products without further manufacture which were reported under Item 6-C? Yes \_\_\_\_\_ No \_\_\_\_\_

If "yes", please explain exactly what was reported under Part 6-C. \_\_\_\_\_

\_\_\_\_\_

Was the cost of goods purchased for resale reported under Item 7-A? Yes \_\_\_\_\_ No \_\_\_\_\_

If "yes", how much of Item 7-A was such cost? \_\_\_\_\_

ITEM 9 INDUSTRIAL WATER INTAKE DURING 1956 FROM OTHER THAN PUBLIC WATER SYSTEMS  
(See Instructions for method of estimation if exact records are not available)

(millions of gallons)

A. Quantity of water intake from company surface water systems \_\_\_\_\_

B. Quantity of water intake from company ground water systems \_\_\_\_\_

C. Total water intake from company water systems (sum of A plus B) \_\_\_\_\_

1. (For mineral establishments only) How were values reported under Item 9 computed?

\_\_\_\_\_

\_\_\_\_\_

Was quantity of water pumped from mines included? Yes \_\_\_\_\_ No \_\_\_\_\_

If "no", please estimate such pumpage \_\_\_\_\_



## APPENDIX B (Continued)

A SUMMARY OF RESULTS FROM THE 1956 QUALITY CONTROL FOLLOW-UP

The purpose of the quality control follow-up was to obtain information on types of errors inherent in the results of the 1956 Industrial Census, to gather information on the record sources of data collected, and to determine the amount of reporting burden associated with certain inquiries.

Random samples of industrial establishments stratified by industry group were selected in six counties. Out of 117 establishments selected in these counties, the fieldmen were able to interview representatives of all except 6 companies which had moved to other locations whose offices were located out of state, or which had gone out of business. The number of interviews by county was as follows: Allegheny-28, Clinton-8, Lehigh-14, Lycoming-24, Northampton-11, and Philadelphia-26.

Seventy-five of the 111 firms reported that book records on the undepreciated value of plant, machinery, and equipment were kept. These 75 companies were, generally speaking, larger companies than the 36 companies without book records. A comparison of size in terms of number of employees was:

<u>Number of employees</u>	<u>Companies with book records</u>	<u>Companies without book records</u>
0-4	14	21
5-19	18	11
20-99	34	4
100 and over	9	--
Total	75	36
Total employees	6,639	294

Although 36 companies estimated gross capital, only nine companies reported the source of their estimates. Three respondents indicated their estimates were based on income tax returns, two based their figures on estimated market value, two indicated they used the original purchase price, and one each mentioned the use of inventory records, and estimates prepared for an insurance report.

In two instances the fieldmen detected errors in the gross capital reported. In one instance the corrected value was 18 percent higher than the reported figure; in the other instance the corrected figure was less than 50 percent as large.

Seventy-three of the companies kept book records on depreciation; the remaining 38 did not. Thirty-six of these 38 companies were the same companies without records of undepreciated capital.

Only 49 of the 111 companies reported book records on value of land. Out of 62 companies without book records on the value of land, 20 companies rented the land their factory was located on. Only two companies with two and five employees respectively, reported that the value of land was incorrectly included with the value of gross capital in Item A-1.

INSTRUCTIONS TO FIELDMEN FOR QUALITY CONTROL INQUIRY

After identifying yourself, ask to see the person listed in Item 11 of the Report who should be contacted if questions arise regarding the Report. If possible, an appointment should be arranged in advance with this person.

Ask the person interviewed to obtain the duplicate copy of the Census of Manufacturing Report and any work sheets he may have used in preparing the form.

Item 4. Determine whether book records are kept for Items A-1, 2, and 4.

Ask the respondent whether the value of land is included under Item A-1.

Determine whether value of land, A-4, is estimated.

Ask the respondent to explain any inconsistencies in the data given or any problems in reporting this data. For example, ask why depreciation reserve is smaller for End of 1956 than for Beginning of 1956.

Item 5. Ask the respondent how answers to Item 5A were reported: Were figures comparable to those reported to the Bureau of Employment Security on Form UC-2 used? If so, note "OK". If the figures were estimated, ask how the estimations were made. Please note if the respondent indicates that supplying this breakdown was burdensome.

Item 5B. Ask the respondent how wages and salaries were computed for columns two through five. Were figures comparable to those used for calculating withholding tax used? If so, note "OK". If the figures were estimated, ask how the estimations were made. Please note if respondent indicates this breakdown was burdensome.

Obtain a complete description of what values, if any, were included under Item 6C, miscellaneous receipts for repair work, etc. If the value of net return from resale of products was included under Item 6C be sure to find out exactly what was reported. Ask whether any cost of goods purchased for resale were reported under Item 7A.





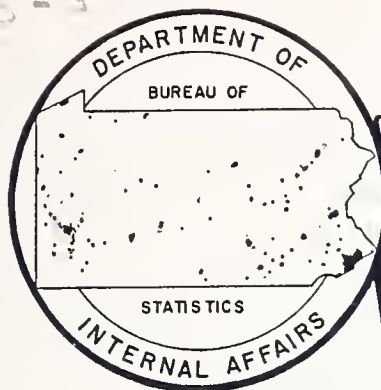


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## MINERAL STATISTICS FOR PENNSYLVANIA

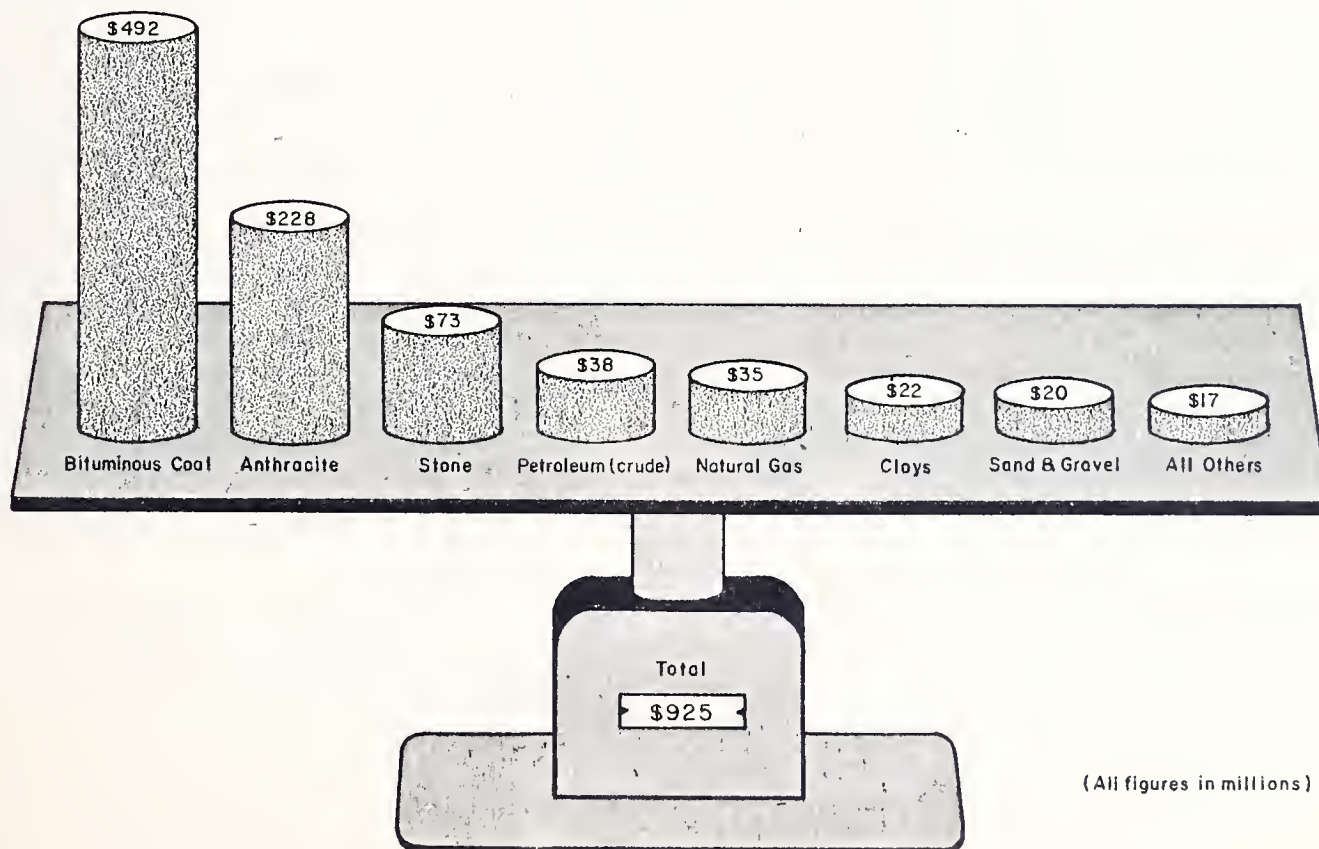
DEPARTMENT OF  
INTERNAL AFFAIRS  
Genevieve Blatt, Secretary

BUREAU OF STATISTICS  
Kenneth Masters, Director  
Elmer Larson, Asst. Director

APRIL 1959

SPECIAL RELEASE S-5

### VALUE OF MINERAL PRODUCTION IN PENNSYLVANIA 1957



# MINERAL STATISTICS FOR PENNSYLVANIA

## CONTENTS

	<u>Page</u>
A. Introduction.....	1
B. Agencies Collecting Statistics on the Mineral Industries in Pennsylvania	
U. S. Bureau of the Census .....	1
Bureau of Employment Security .....	1
Department of Mines and Mineral Industries.....	1
Bureau of Statistics .....	1
C. Other Sources of Data .....	2
Table 1: Number of Mineral Operations in Pennsylvania, 1954 .....	3
Table 2: Mineral Production in Pennsylvania: 1956, 1957, and 1958.....	4
Table 3: Value of Mineral Production in Pennsylvania by County, 1956 and 1957.....	5
Table 4: Employment for the Major Mineral Industries in Pennsylvania by County, First Quarter, 1957 .....	6
Table 5: Employment for the Major Mineral Industries in Pennsylvania by County, First Quarter, 1958 .....	7
Table 6: Wages for the Major Mineral Industries in Pennsylvania by County, First Quarter, 1957 .....	8
Table 7: Wages for the Major Mineral Industries in Pennsylvania by County, First Quarter, 1958 .....	9
Table 8: Production and Employment for the Anthracite Industry in Pennsylvania by County: 1957 and 1958.....	10
Table 9: Production and Employment for the Bituminous Coal Industry in Pennsylvania by County: 1957 and 1958.....	10
Table 10: General Statistics for Mineral and Associated Manufacturing Establishments in Pennsylvania by Industry Group and Industry: 1957 .....	11
Table 11: Shipments of Crude Petroleum Produced in Pennsylvania and Number of Wells Connected by County: 1955, 1956, and 1957.....	12

## MINERAL STATISTICS FOR PENNSYLVANIA

### A. INTRODUCTION:

The purpose of this report is to present statistics for the mineral industries in Pennsylvania compiled from each of five major data collection sources, and to evaluate some of the differences among these statistics.

### B. AGENCIES COLLECTING STATISTICS ON THE MINERAL INDUSTRIES IN PENNSYLVANIA:

The state and federal agencies which collect and publish statistics on Pennsylvania's mineral industries together with brief descriptions of their statistical activities are as follows:

U. S. Bureau of the Census. The Bureau of the Census in the U. S. Department of Commerce conducts periodic censuses of mineral industries in the United States. The most recent census was for 1954; a census for 1958 is currently being conducted. The results of the 1954 Census of Mineral Industries is available in two volumes: Volume I Summary and Industry Statistics, and Volume II Area Statistics. The individual bulletin for Pennsylvania, which may be obtained at a cost of 20 cents from the U. S. Government Printing Office, Washington 25, D. C., is Bulletin MI-137. Statistics on the number of mineral operations by industry from this bulletin are shown in table 1.

U. S. Bureau of Mines. The Bureau of Mines in the U. S. Department of Interior conducts an annual canvas of all mineral operations in Pennsylvania including operations classified as manufacturing by the Standard Industrial Classification (see table 1). Information on commodity production for metal, non-metallic, and bituminous coal production is analyzed and tabulated by the Pittsburgh office; additional information collected on employment and accidents is tabulated by the Branch of Accident Analysis in Washington, D. C. Similar data for the anthracite industry are collected by the Bureau of Mines office located in Schuylkill Haven.

Statistics on oil and gas are collected by the Branch of Petroleum Economics, Division of Petroleum, Washington, D. C. Crude oil production represents receipts by crude oil purchasing companies (principally trunk pipelines) from producing properties and are usually reported as receipts from an entire field or group of oil fields. Statistics for natural gas are for marketed production.

Statistics for nonfuel minerals are tabulated by product rather than by industry and include the value of production of certain manufactured products such as lime and cement. Summary statistics for 1956, 1957, and 1958 are shown in table 2. Value of mineral production in Pennsylvania by county for 1956 and 1957 is shown in table 3.

Statistics collected by the Bureau of Mines are published in bulletin form and in a three volume series, Minerals Yearbook. Of particular interest is the chapter in Volume I comparing Bureau of Mines and Bureau of Census 1954 data.

Bureau of Employment Security. The Bureau of Employment Security (BES) in the Pennsylvania Department of Labor and Industry publishes a number of releases which include statistics for Pennsylvania's mineral industries.

Pennsylvania Employment and Earnings includes monthly estimates of employment for the anthracite industry, the bituminous coal industry, and all other mining industries in the state. In addition, average weekly earnings and hours worked, and average hourly earnings are presented for the bituminous coal industry.

Employment and Wages of Workers Covered by the Pennsylvania Unemployment Compensation Law is an annual BES publication in their Statistical Information Bulletin series. Monthly employment and quarterly wages (total and taxable) are presented for the following 18 mineral industries in five major industry groups:

#### Metal Mining

- Iron ore mining
- Lead and zinc ore mining
- Gold and silver ore mining
- Aluminum ore mining
- Metal mining contract services
- Metal mining, not elsewhere classified

#### Anthracite Mining

#### Bituminous and Other Soft Coal Mining

- Bituminous coal mining
- Semianthracite mines
- Lignite mines (including peat)

#### Crude Petroleum and Natural Gas Production

- Crude petroleum production
- Natural gas and natural gasoline production
- Oil and gas-field contract services

#### Nonmetallic Mining and Quarrying

- Dimension stone quarries
- Crushed stone quarries, other than limestone
- Crushed limestone quarries
- Sand and gravel quarries, pits, and dredges
- Clays, ceramic, and refractory minerals
- Nonmetallic minerals, not elsewhere classified

Employment and total wages for the first quarter of each year for major industry groups by county are presented in a separate Statistical Information Bulletin. Employment figures are for all full or part-time, permanent or temporary workers who earned wages in covered activities during the pay period ending nearest the 15th of March. Workers on leave with pay are counted, but workers who earned no wages during the quarter because of strikes, temporary layoffs, sickness, or unpaid vacations are not included. Wages consist of all remuneration paid by covered employers during the first quarter.

An employer who has 50 or more employees working outside the county of his principal operation is generally required to furnish a breakdown of employment and wages for other counties. If the employment is less than 50 workers, all data are classified in the county of principal operation.

Standard industrial classifications are used by the BES and the "rule of three" is used for the purpose of keeping individual company data confidential--statistics for fewer than three companies are not revealed.

Statistics on employment and total wages for the first quarter in 1957 and 1958 for major industry groups and by county are shown in tables 4 through 7.

Department of Mines and Mineral Industries. The Pennsylvania Department of Mines and Mineral Industries collects statistics on employment, production, and injuries for all anthracite and bituminous coal mining operations in the state. These statistics are collected by the Department's mine inspectors and are published in three releases--the Annual Report for the Bituminous Coal Division, the Annual Report for the Anthracite Division, and the monthly Safety Sentinel Reports.

The annual reports present individual company data for production by destination and means of transportation, explosives used, days worked, number of employees, and accidents. Summary tables are also included, two of which are shown in tables 8 and 9.

The concept of employment used by the Department of Mines is the total number of persons on the payroll during the year. Unlike the statistics on employment published by the BES and the Department of Internal Affairs, self-employed persons working as individual proprietors or in partnerships are included in the employment figures published by the Department of Mines. Some indication of the magnitude of self-employment is revealed by the number of persons working in anthracite operations with fewer than 5 persons. In 1957 there were 2,719 such persons.

The monthly Safety Sentinel Reports contain statistics on shipments of anthracite and bituminous coal by size, by destination of shipments, and by means of transportation (by truck or by railroad).

Bureau of Statistics. The Bureau of Statistics in the Pennsylvania Department of Internal Affairs conducts an annual industrial census for Pennsylvania. The results of the industrial census are published in a series of releases as follows:

M-1 Statistics for Manufacturing and Mineral Industries in Pennsylvania. Statistics on the number of establishments, number of employees, wages and salaries, value of production, value added by manufacture and by mining, and capital expenditures by major industry group for the state and by county and urban place. Data from this release are presented in table 9.

M-2 Statistics by Major Industry Group for Counties and Urban Places. Statistics similar to those included in release M-1 for each county and major urban place by major industry group (two-digit Standard Industrial Classifications).



M-3 Statistics for Urban Fringe Areas.

Employment and production statistics for industrial cities and adjacent industrial fringe areas for manufacturing industries only.

M-4 Statistics by Industry. Number of estab-

lishments, number of employees, wages and salaries, capital expenditures, value of production and related activities, and value added for 429 four-digit manufacturing industries and 14 four-digit mineral industries. Statistics from this release for the Stone, clay, and glass products industry and for mineral industries are given in table 10.

The scope of coverage for mineral industries in the 1957 Industrial Census included anthracite and bituminous coal producers, and producers of minerals except fuels. Producers of natural gas and crude oil were not included in the 1957 census. Natural gas production for gas utilities are included in release U-2, published by the Bureau of Statistics; statistics on crude oil production as reported by petroleum pipeline producers are shown in table 11 of this release. Definitions of terms and additional explanatory notes are given in the releases listed above.

The 1958 Industrial Census will not include anthracite and bituminous coal producers. Because of the large number of other agencies collecting statistics for the anthracite and bituminous coal industries in Pennsylvania, the Bureau of Statistics felt that it could make a greater contribution by attempting to evaluate and reconcile the sources of statistics in existence rather than by collecting primary statistics for these industries.

C. OTHER SOURCES OF DATA:

The Bureau of Research and Statistics in the Department of Labor and Industry publishes statistics on industrial injuries reported to the Workmen's Compensation Bureau.

The Anthracite Institute, 237 Old River Road, Wilkes-Barre, publishes weekly reports on the number of car loadings of anthracite.

The Anthracite Committee, State Street Building, Harrisburg, publishes a monthly release on the production of anthracite by size.

TABLE 1: NUMBER OF MINERAL OPERATIONS IN PENNSYLVANIA, 1954

(Number of operations is synonymous with number of establishments except for operations classified in the manufacturing industries which can refer to subsidiary mines or quarries.)

Industry	Total number of operations	Classified in mineral industries	Included in manufactures
All mineral operations	4, 681	4, 538	143
Metal mining			
Iron ores	2	2	-
Zinc ores	1	1	-
Manganese ores	1	1	-
Metal mining contract services	2	2	-
Titanium ores	1	1	-
Anthracite mining			
Anthracite	1, 291	1, 291	-
Anthracite stripping contract services	132	132	-
Anthracite contract services, except stripping	13	13	-
Bituminous coal mining			
Bituminous coal	1, 545	1, 545	-
Bituminous coal contract services	62	62	-
Crude petroleum and natural gas extraction			
Crude petroleum and natural gas	910	910	-
Natural gas liquids	10	10	-
Oil and gas field contract services	185	185	-
Nonmetallic minerals (except fuels)			
mining (dimension stone)			
Limestone (classified in mineral industries)	6	6	-
Granite			
Classified in mineral industries	2	2	-
Included in manufactures	3	-	3
Slate (classified in manufactures)	15	-	15
Dimension stone			
Sandstone			
Classified in mineral industries	20	20	-
Included in manufactures	7	-	7
Stone, n.e.c.			
Classified in mineral industries	13	13	-
Included in manufactures	6	-	6
Crushed and broken stone			
Limestone			
Classified in mineral industries	114	114	-
Included in manufactures	38	-	38
Slate	2	2	-
Trap rock	14	14	-
Sandstone	25	25	-
Stone, n.e.c.	7	7	-
Sand and gravel			
Common sand and gravel	89	89	-
Glass sand	3	3	-
Foundry sand	6	6	-
Clay, ceramic, and refractory minerals			
Fire clay			
Classified in mineral industries	58	58	-
Included in manufactures	22	-	22
Kaolin and ball clay			
Classified in mineral industries	1	1	-
Clay, ceramic, and refractory minerals, n.e.c.			
Classified in mineral industries	13	13	-
Included in manufactures	51	-	51
Natural abrasives, except sand, n.e.c.	1	1	-
Chemical and fertilizer mineral mining, n.e.c.	1	1	-
Nonmetallic minerals (except fuels)			
contract services	2	2	-
Miscellaneous nonmetallic minerals (except fuels)			
Mica	1	1	-
Peat	5	5	-

Source: U. S. Department of Commerce, Bureau of the Census, "1954 Census of Mineral Industries."

TABLE 2: MINERAL PRODUCTION IN PENNSYLVANIA: 1956, 1957, AND 1958

(Production is measured by mine shipments, sales or marketable production, including consumption by producers. Data for 1958 are preliminary estimates.)

Mineral and industry group	Quantity (in short tons unless otherwise stated)			Values (in thousands of dollars)		
	1956	1957	1958	1956	1957	1958
Mineral industries, total				\$921,297	\$926,497	\$735,982
Anthracite	28,900,200	25,338,321	21,000,000	236,785	227,754	180,000
Bituminous coal	90,286,692	85,365,254	66,620,000	479,437	492,539	(1)
Crude petroleum and natural gas						
Crude petroleum--thousand 42 gallon barrels	8,230	8,179	6,867	35,718	38,687	28,925
Natural gas--million cubic feet	104,508	107,300	106,100	33,652	35,400	33,700
Natural gasoline-thousand gallons	4,081	3,106	1,600	251	192	100
LP gases--thousand gallons	1,127	1,211	1,300	99	106	120
Nonmetallic minerals, except fuels						
Clays (excluding kaolin)	4,412,550	4,073,666	3,260,000	23,782	22,012	18,050
Sand and gravel	14,047,068	12,405,654	11,250,000	21,321	19,570	18,900
Stone	44,912,987	43,257,558	36,741,000	73,831	73,090	61,514
Tripoli	1,030	(1)	(1)	7	(1)	(1)
Peat	20,498	26,086	28,300	214	236	265
All other (1)	-	-	-	16,200	16,911	394,408
Manufacturing industries						
Cement, portland--376 pound barrels	49,526,640	42,519,334	40,197,000	153,506	140,100	134,258
Cement, masonry--376 pound barrels	2,437,168	2,161,109	1,929,000	8,882	8,030	6,944
Iron oxide pigment (crude)	600	998	900	7	9	6
Lime	1,443,430	1,298,401	1,310,000	18,282	18,406	18,572
Slate (2)	153,824	139,283	140,000	4,194	4,005	3,765
Sulfur (recoverable elemental sulfur)-- long tons	11,350	(1)	(1)	386	(1)	(1)

(1) Products whose value is undisclosed: Copper, cobalt, gold, iron ore, kaolin, mica, oystershell (1956), pyrites, sericite schist, silver, and stone (dimension basalt 1956). The quantity of cobalt production was 533,329 short pounds in 1956, 599,122 pounds in 1957 and 599,000 pounds in 1958.

(2) According to the 1957 Industrial Census of Pennsylvania, there were only 3 slate producers (with 36 employees) classified as mineral industries. All other establishments producing slate products were classified as manufacturers.

Source: Bureau of Mines, U.S. Department of Interior.

TABLE 3: VALUE OF MINERAL PRODUCTION IN PENNSYLVANIA BY COUNTY, 1956 AND 1957

(in thousands of dollars)

County	1956	1957	Minerals produced in 1957 in order of value
Total	\$1,088,867	\$1,082,093	
Adams	(4)	(4)	Stone, sericite, schist, clays
Allegheny	64,537	59,810	Coal, cement, clays, sand and gravel, stone
Armstrong	15,915	17,486	Coal, clays, sand and gravel, stone, lime
Beaver	4,687	(4)	Clays, coal, sand and gravel
Bedford	2,084	1,661	Stone, coal, lime, sand and gravel
Berks	9,671	9,605	Cement, stone, clays, sand and gravel, oyster shell
Blair	2,453	2,110	Stone, coal, clays, sand and gravel
Bradford	(4)	(4)	Sand and gravel, coal
Bucks	7,121	(4)	Sand and gravel, stone, clays
Butler	16,752	17,027	Coal, cement, stone, lime, sand and gravel, clays
Cambria	68,839	71,430	Coal, clays, sand and gravel, crude iron oxide pigments
Cameron	(4)	(4)	Coal
Carbon	15,866	10,024	Coal, stone, sand and gravel, clays
Centre	16,624	15,044	Lime, coal, stone, clays, sand and gravel
Chester	4,636	4,644	Stone, lime, clays, gem stone
Clarion	14,236	12,182	Coal, clays
Clearfield	(4)	(4)	Coal, clays, sand and gravel
Clinton	2,746	2,650	Coal, stone, clays
Columbia	6,186	(4)	Coal, sand and gravel, clays
Crawford	161	138	Sand and gravel
Cumberland	1,150	462	Stone, sand and gravel, clays
Dauphin	4,642	4,215	Stone, coal, clays, lime, sand and gravel
Delaware	(4)	3,179	Stone, sulfur
Elk	(4)	1,596	Coal, clays, sand and gravel, crude iron oxide pigments
Erie	(4)	(4)	Sand and gravel, peat
Fayette	35,323	40,836	Coal, clays, stone, sand and gravel
Forest	151	(4)	Sand and gravel
Franklin	933	926	Stone, sand and gravel, lime
Fulton	399	(4)	Stone, lime
Greene	68,824	80,300	Coal
Huntingdon	5,848	4,334	Sand and gravel, stone, coal, clays
Indiana	36,557	(4)	Coal, clays, stone
Jefferson	(4)	(4)	Coal, clays
Juniata	554	(4)	Stone
Lackawanna	28,613	26,503	Coal
Lancaster	6,132	5,622	Stone, lime, coal, sand and gravel, clays, gem stone
Lawrence	18,979	22,084	Cement, stone, coal, clays, sand and gravel
Lebanon	20,131	22,039	Iron ore, stone, copper, lime, cobalt, pyrite, gold, silver, coal
Lehigh	(4)	(4)	Cement, stone, oyster shell
Luzerne	91,793	(4)	Coal, sand and gravel, stone, peat, clays
Lycoming	1,494	1,708	Stone, sand and gravel, coal, tripoli, clays, slate
McKean	820	615	Clays, coal, sand and gravel
Mercer	3,016	2,607	Coal, sand and gravel, peat, stone
Mifflin	(4)	(4)	Sand and gravel, stone, lime
Monroe	(4)	(4)	Stone, sand and gravel
Montgomery	(4)	13,660	Stone, cement, lime, clays, sand and gravel
Montour	(4)	(4)	Stone
Northampton	83,082	(4)	Cement, slate, stone, sand and gravel, coal
Northumberland	26,594	(4)	Coal, clays, stone, sand and gravel, lime
Perry	94	(4)	Stone
Philadelphia	429	415	Sand and gravel
Potter	(4)	142	Stone
Schuylkill	69,800	74,041	Coal, stone, sand and gravel, clays
Snyder	388	382	Clays, stone, coal, lime
Somerset	22,474	21,798	Coal, clays, stone, sand and gravel
Sullivan	57	(4)	Coal
Susquehanna	(4)	427	Stone
Tioga	486	(4)	Coal
Union	(4)	413	Stone
Venango	(4)	(4)	Coal, sand and gravel
Warren	(4)	(4)	Sand and gravel
Washington	95,669	91,827	Coal, clays
Wayne	300	460	Stone, sand and gravel
Westmoreland	20,937	(4)	Coal, stone, clays
Wyoming	(4)	(4)	Sand and gravel, stone
York	12,527	15,016	Cement, stone, lime, slate, clays, sand and gravel, mica, gem stone
Undistributed	178,158	422,675	

Detail may not add to total because of rounding

(1) Pike County is not listed because no production was reported.

(2) Excludes value of production for L-P gases, natural gas, natural gasoline, petroleum, and some gem stone, unspecified by counties, but value is included with "undistributed".

(3) Excludes values of clays and stone used in the manufacture of lime and cement.

(4) Figure withheld to avoid disclosing individual company confidential data but included with "undistributed".

Source: U.S. Department of the Interior, Bureau of Mines.



TABLE 4: EMPLOYMENT FOR THE MAJOR MINERAL INDUSTRIES IN PENNSYLVANIA  
BY COUNTY, FIRST QUARTER, 1957

County	Employment					
	All mineral industries	Anthracite mining	Bituminous coal mining	Crude petroleum and natural gas	Nonmetallic mining and quarrying	Other (1)
Total	92,141	30,091	39,901	4,398	5,133	1,678
Adams (2)	23					
Allegheny (2)	8,063		7,021	492	517	33
Armstrong	1,391		1,059	104	228	
Beaver	289		239			50
Bedford (2)	70					
Berks	151				139	12
Blair	221		117			104
Bradford (2)	23					
Bucks	372				370	2
Butler	1,070		490	162	418	
Cambria (2)	8,675					
Cameron (2)	61					
Carbon	1,269	1,246				23
Centre	608		532			76
Chester	225				201	24
Clarion	801		581	191	29	
Clearfield	2,763		2,513		241	9
Clinton (2)	64					
Columbia	653	644				9
Crawford	264			194		70
Cumberland	130				105	25
Dauphin	294	112			149	33
Delaware	283				277	6
Elk	270		220			50
Erie (2)	11					
Fayette	3,974	3,912				62
Forest	42			42		
Franklin	156				156	
Fulton	(3)					
Greene	5,765		5,633	122		10
Huntingdon (2)	83					
Indiana	3,782		3,686			96
Jefferson	1,071		959	112		
Juniata	(3)					
Lackawanna	5,081	5,055				26
Lancaster	380				370	10
Lawrence	660		208		452	
Lebanon (2)	1,313					
Lehigh (2)	164					
Luzerne	12,876	12,787				89
Lycoming	143				122	21
McKean	2,408			2,372		36
Mercer	177		150			27
Mifflin	111				111	
Monroe (2)	24					
Montgomery	391				368	23
Montour (2)	23					
Northampton	276				262	14
Northumberland	2,404	2,404				
Perry	(3)					
Philadelphia	396		134	159		103
Pike	(3)					
Potter (2)	94					
Schuylkill	7,962	7,843				119
Snyder (2)	52					
Somerset	3,139		3,103			36
Sullivan	(3)					
Susquehanna (2)	9					
Tioga (2)	72					
Union	(3)					
Venango	387			331		56
Warren (2)	139					
Washington	6,546		6,261			285
Wayne (2)	9					
Westmoreland	3,232		3,083	117	32	
Wyoming (2)	31					
York	611				586	25
Miscellaneous (3)	114					114

(1) Except for Allegheny County, which is all metal mining, these figures are combined for two or more industries in order not to disclose confidential data.

(2) Detail not reported to avoid revealing confidential data.

(3) Data for Fulton, Juniata, Perry, Pike, Sullivan, and Union Counties are not shown separately in order not to reveal data for individual employers. Total figures for these counties are listed in Miscellaneous.

Source: Pennsylvania Department of Labor and Industry, Bureau of Employment Security.

TABLE 5: EMPLOYMENT FOR THE MAJOR MINERAL INDUSTRIES IN PENNSYLVANIA  
BY COUNTY, FIRST QUARTER, 1958

County	Employment					
	All mineral industries	Anthracite mining	Bituminous coal mining	Crude petroleum and natural gas	Nonmetallic mining and quarrying	Other (1)
Total	78,053	22,137	40,315	4,502	4,886	2,642
Adams (2)	39					
Allegheny	6,749		5,685	600	437	27
Armstrong	1,187		1,000	112	75	
Beaver	282		234			48
Bedford (2)	107					
Berks	142				134	8
Blair	206		142		64	
Bradford (2)	22					
Bucks	340			5	335	
Butler	1,089		538	156	356	39
Cambria	7,809		7,805			4
Cameron (2)	100					
Carbon	321	299				22
Centre	490		415			75
Chester (2)	148					
Clarion	833		640	166	27	
Clearfield	2,451		2,335		116	
Clinton (2)	55					
Columbia	583	571			5	12
Crawford	176			171		
Cumberland	13				107	24
Dauphin	277	101			164	12
Delaware	286				279	7
Elk	239		207			32
Erie (2)	35					
Fayette	2,877		2,819			58
Forest	41			41		
Franklin	185				185	
Fulton	(3)					
Greene	4,964		4,873			91
Huntingdon (2)	72					
Indiana	3,262		224			38
Jefferson	1,088		948	140		
Juniata	(3)					
Lackawanna	4,248	4,202				46
Lancaster	334				324	10
Lawrence	691		216		475	
Lebanon (2)	91					
Lehigh	517				346	171
Luzerne	10, . .	10,317				133
Lycoming	126				120	6
McKean	2,258			2,232		26
Mercer (2)	205					
Mifflin	111				111	
Monroe (2)	7					
Montgomery	377				341	36
Montour (2)	31					
Northampton	1,798				270	1,528
Northumberland (2)	2,213					
Perry	(3)					
Philadelphia	639		449	116		74
Pike	(3)					
Potter	86			84		2
Schuylkill	6,700	6,647				53
Snyder (2)	34					
Somerset	2,228		2,218			10
Sullivan (2)	8					
Susquehanna (2)	13					
Tioga (2)	81					
Union	(3)					
Venango	361			324		37
Warren (2)	103					
Washington	4,864		4,621	236	7	
Wayne (2)	12					
Westmoreland	2,092		1,946	119	27	
Wyoming (2)	19					
York	594				581	13
Miscellaneous (3)	176					

(1) Except for Allegheny County, which is all metal mining, these figures are combined for two or more industries in order not to disclose confidential data.

(2) Detail not reported to avoid revealing confidential data.

(3) Data for Fulton, Juniata, Perry, Pike, and Union Counties are not shown separately in order not to reveal data for individual employers. Total figures for these counties are listed in Miscellaneous.

Source: Pennsylvania Department of Labor and Industry, Bureau of Employment Security.

TABLE 6: WAGES FOR THE MAJOR MINERAL INDUSTRIES IN PENNSYLVANIA  
BY COUNTY, FIRST QUARTER, 1957

County	Wages (in thousands of dollars) (1)					
	All mineral industries	Anthracite mining	Bituminous coal mining	Crude petroleum natural gas	Nonmetallic mining and quarrying	Other (2)
Total	\$113,725	\$33,366	\$44,852	\$13,597	\$5,877	\$1,630
Adams (3)	18					
Allegheny	11,990		10,652	524	767	47
Armstrong	1,671		1,352	66	253	
Beaver	311		253			58
Bedford (3)	50					
Berks	145				134	12
Blair	166		95			71
Bradford (3)	15					
Bucks	469				466	2
Butler	1,090		545	110	434	
Cambria (3)	12,111					
Cameron (3)	67					
Carbon	1,364	1,341				23
Centre	559		482			77
Chester	272				245	27
Clarion	735		572	142	20	
Clearfield	2,682		2,416		259	7
Clinton (3)	49					
Columbia	845	835				10
Crawford	253			185		67
Cumberland	130				99	31
Dauphin	300	84			176	40
Delaware	293				289	4
Elk	304		269			34
Erie (3)	8					
Fayette	6,004		5,932			72
Forest	31			31		
Franklin	145				145	
Fulton (4)						
Greene	7,890		7,831	58		2
Huntingdon (3)	83					
Indiana	5,251		5,136			115
Jefferson	1,088		977	111		
Juniata	(4)					
Lackawanna	5,721	5,705				16
Lancaster	366				357	9
Lawrence	780		225		555	
Lebanon (3)	1,499					
Lehigh (3)	161					
Luzerne	14,819	14,752				67
Lycoming	138				125	13
McKean	2,522			2,492		30
Mercer	169		154			15
Mifflin	124				124	
Monroe (3)	13					
Montgomery	442				419	24
Montour (3)	22					
Northampton	344				326	18
Northumberland	2,482	2,482				
Perry (4)						
Philadelphia	671		241	294		136
Pike (4)						
Potter (3)	81					
Schuylkill	8,307	8,167				140
Snyder (3)	34					
Somerset	3,584		3,548			36
Sullivan (4)						
Susquehanna (3)	5					
Tioga (3)	68					
Union (4)						
Venango	275			213		62
Warren (3)	98					
Washington	9,449			9,229		220
Wayne (3)	6					
Westmoreland	4,327		4,172	142	13	
Wyoming (3)	12					
York	699				671	27
Miscellaneous (4)	118					118

(1) Detail may not add to total because of rounding.

(2) Except for Allegheny County, which is all metal mining, these figures are combined for two or more industries in order not to disclose confidential data.

(3) Detail not reported to avoid revealing confidential data.

(4) Data for Fulton, Juniata, Perry, Pike, Sullivan and Union Counties are not shown separately in order not to reveal data for individual employers. Total figures for these six counties are listed in Miscellaneous.

Source: Pennsylvania Department of Labor and Industry, Bureau of Employment Security.

TABLE 7: WAGES FOR THE MAJOR MINERAL INDUSTRIES IN PENNSYLVANIA  
BY COUNTY, FIRST QUARTER, 1958

County	Wages (in thousands of dollars) <sup>(1)</sup>					
	All mineral industries	Anthracite mining	Bituminous coal mining	Crude petroleum and natural gas	Nonmetallic mining and quarrying	Other <sup>(2)</sup>
Total	\$90,017	\$23,562	\$49,744	\$4,760	\$5,518	\$2,967
Adams (3)	38					
Allegheny	9,150		7,632	770	710	39
Armstrong	1,453		1,248	81	124	
Beaver	292		236			56
Bedford (3)	83					
Berks	129				119	10
Blair	172		125		47	
Bradford (3)	17					
Bucks	400			5	395	
Butler	984		593	93	248	50
Cambria	10,157		10,154			3
Cameron (3)	129					
Carbon	465	440				25
Centre	480		401			79
Chester (3)	142					
Clarion	770		601	140	29	
Clearfield	2,358		2,179		179	
Clinton (3)	50					
Columbia	558	548				10
Crawford	240			236	4	
Cumberland	119				93	26
Dauphin	267	103			163	1
Delaware	258				253	5
Elk	290		267			23
Erie (3)	32					
Fayette	4,145		4,070			75
Forest	33			33		
Franklin	174				174	
Fulton	(4)					
Greene	5,699		5,671			29
Huntingdon (3)	79					
Indiana	4,148		4,118			31
Jefferson	1,083		940	143		
Juniata	(4)					
Lackawanna	4,132	4,081				51
Lancaster	315				304	11
Lawrence	814		241		573	
Lebanon (3)	85					
Lehigh	510				338	171
Luzerne	11,296	11,156				140
Lycoming	122				116	6
McKean	2,439			2,412		27
Mercer (3)	193					
Mifflin	120				120	
Monroe (3)	11					
Montgomery	505				388	117
Montour (3)	24					
Northampton	2,244				359	1,885
Northumberland (3)	2,177					
Perry	(4)					
Philadelphia	909		623	190	95	
Pike	(4)					
Potter	87			86		1
Schuylkill	7,280	7,234				46
Snyder (3)	31					
Somerset	2,378		2,371			6
Sullivan (3)	7					
Susquehanna (3)	3					
Tioga (3)	78					
Union	(4)					
Venango	255			222		34
Warren (3)	78					
Washington	5,936		5,746	188	3	
Wayne (3)	11					
Westmoreland	2,700		2,528	161	10	
Wyoming (3)	15					
York	684				674	10
Miscellaneous (4)	183					

(1) Detail may not add to total because of rounding.

(2) Except for Allegheny County, which is all metal mining, these figures are combined for two or more industries in order not to disclose confidential data.

(3) Detail not reported to avoid revealing confidential data.

(4) Data for Fulton, Juniata, Perry, Pike, and Union Counties are not shown separately in order not to reveal data for individual employers. Total figures for these counties are listed in Miscellaneous.

Source: Pennsylvania Department of Labor and Industry, Bureau of Employment Security.



TABLE 8: PRODUCTION AND EMPLOYMENT FOR THE ANTHRACITE INDUSTRY IN PENNSYLVANIA  
BY COUNTY: 1957 AND 1958

(all production in thousands of short tons)

County	Number of employees		Quantity of production by type of mining							
	1957	1958	Total production <sup>(1)</sup>		Deep mining		Strip mining		Bank mining	
			1957	1958	1957	1958	1957	1958	1957	1958
Total	32,767	26,738	25,163	20,456	12,975	10,744	7,832	7,001	4,357	2,711
Carbon	1,892	837	1,107	623	778	502	259	24	71	98
Columbia	1,143	1,064	850	888	521	536	203	326	127	26
Dauphin	191	167	195	124	108	38	9	20	79	65
Lackawanna	4,309	3,448	2,680	2,094	1,795	1,211	593	542	293	341
Lebanon	5	6	4	9	4	-	-	9	-	-
Luzerne	12,442	9,642	8,389	6,774	5,006	4,213	2,337	2,074	1,046	487
Northumberland	3,239	3,022	3,416	2,601	1,648	1,379	824	596	944	626
Schuylkill	9,539	8,506	8,515	7,299	3,117	2,861	3,600	3,396	1,798	1,042
Sullivan	7	25	7	15	-	5	7	7	-	3
Susquehanna	-	3	-	2	-	-	-	2	-	-
Wayne	-	18	-	28	-	-	-	4	-	24

Detail may not add to total because of rounding.

(1) Not including river coal dredged in Lancaster and York Counties.

Source: Commonwealth of Pennsylvania, Department of Mines and Mineral Industries.

TABLE 9: PRODUCTION AND EMPLOYMENT FOR THE BITUMINOUS COAL INDUSTRY  
IN PENNSYLVANIA BY COUNTY: 1957 AND 1958

(all production in thousands of short tons)

County	Number of employees		Quantity of production by type of mining							
	1957	1958	Total production		Deep mined		Strip mined		Auger mined	
			1957	1958	1957	1958	1957	1958	1957	1958
Total	46,989	41,309	84,064	67,399	63,299	47,746	20,559	19,548	207	105
Allegheny	3,669	2,984	6,920	4,975	6,456	4,566	463	410	1	-
Armstrong	1,407	1,370	2,249	2,326	1,158	1,169	1,038	1,123	53	33
Beaver	213	149	345	225	47	30	295	189	3	6
Bedford	244	251	165	173	152	130	13	42	-	-
Blair	67	77	59	121	20	19	39	103	-	-
Bradford	-	4	-	11	-	-	-	11	-	-
Butler	767	804	1,947	2,048	295	267	1,652	1,767	-	13
Cambria	8,369	7,360	10,533	8,165	10,045	7,857	477	303	11	5
Cameron	32	37	63	29	-	-	63	29	-	-
Centre	451	386	1,073	649	69	63	1,004	586	-	-
Clarion	942	838	2,824	2,768	121	86	2,703	2,682	-	-
Clearfield	3,330	3,272	6,298	5,652	1,566	1,323	4,679	4,324	52	4
Clinton	160	162	592	622	30	20	553	602	9	-
Elk	254	253	308	351	150	168	158	168	-	15
Fayette	3,151	2,205	4,950	2,909	4,450	2,571	495	334	5	4
Fulton	-	-	-	-	-	-	-	-	-	-
Greene	6,278	5,441	12,275	9,752	12,267	9,737	8	15	-	-
Huntingdon	77	83	53	58	25	18	28	40	-	-
Indiana	3,734	3,283	6,777	5,606	5,688	4,646	1,054	956	35	3
Jefferson	1,073	930	1,489	1,381	595	472	887	910	7	-
Lawrence	280	273	1,098	1,129	4	8	1,093	1,121	-	-
Lycoming	43	42	86	63	16	18	70	45	-	-
McKean	17	14	42	47	-	-	42	47	-	-
Mercer	172	190	508	608	50	45	458	562	-	-
Somerset	3,211	2,417	3,828	2,668	2,446	1,517	1,372	1,145	10	6
Tioga	116	126	265	297	43	32	222	265	-	-
Venango	144	172	798	634	1	1	797	633	-	-
Washington	6,424	6,070	13,784	10,575	13,023	9,519	742	1,041	19	15
Westmoreland	2,364	2,116	4,737	3,558	4,580	3,464	156	94	2	-

Detail may not add to total because of rounding.

Source: Commonwealth of Pennsylvania, Department of Mines and Mineral Industries.

TABLE 10: GENERAL STATISTICS FOR MINERAL AND ASSOCIATED MANUFACTURING ESTABLISHMENTS  
IN PENNSYLVANIA BY INDUSTRY GROUP AND INDUSTRY: 1957  
(all money figures in thousands of dollars)

Industry code	Industry	Number of plants	Capital expenditures during 1957	Number of employees	Total wages and salaries	Value of production and related activities	Value added by manufacture or mining	Coverage ratio (a)	Specialization ratio (b)
32	Stone, clay, and glass products	906	\$57,365	68,261	\$310,929	\$968,744	\$639,953		
3211	Flat glass	12	2,878	5,030	28,556	82,976	61,747	93.6	80.6
3221	Glass containers	16	8,352	9,898	39,568	114,795	70,746	99.9	97.6
3229	Pressed and blown glassware, n.e.c.	31	1,435	6,697	27,025	71,551	51,209	94.6	93.0
3231	Products of purchased glass	70	2,438	5,344	29,669	113,447	78,945	84.1	97.8
3241	Cement, hydraulic	26	19,925	7,028	34,584	142,962	95,349	98.3	95.9
3251	Brick and hollow tile	50	2,057	3,126	13,809	30,575	22,812	96.7	98.2
3253	Floor and wall tile	7	646	1,362	6,248	17,987	13,494	93.3	98.4
3254	Sewer pipe	6	267	955	3,746	8,235	6,078	98.2	98.2
3255	Clay refractories	44	2,608	4,570	21,732	55,903	35,648	98.7	92.8
3259	Structural clay products, n.e.c.	8	99	275	1,161	2,220	1,773	92.5	81.9
3262	Vitreous china food utensils (1)	10	1,602	3,794	15,646	30,228	24,137	98.3	98.1
3264	Porcelain electrical supplies	3	258	799	3,508	8,470	6,625	100.0	93.1
3269	Pottery products, n.e.c. (2)	18	84	361	1,315	3,234	2,439	91.3	88.1
3271	Concrete products	348	3,976	4,455	16,303	59,366	32,974	89.1	94.9
3274	Lime (3)	28	2,922	1,741	8,007	29,451	17,902	95.1	86.3
3281	Cut-stone and stone products	80	332	1,322	4,890	11,220	7,211	98.4	98.2
3291	Abrasive products	26	474	1,777	8,654	24,740	16,760	99.9	88.5
3292	Asbestos products	8	1,658	2,747	13,165	38,261	23,646	90.9	82.9
3293	Gaskets and asbestos insulation	20	571	1,429	6,729	20,246	12,154	73.4	67.7
3295	Minerals-ground or treated	54	3,172	2,003	10,169	42,150	20,528	80.7	80.7
3297	Nonclay refractories	23	1,564	3,240	15,520	58,342	36,376	84.9	99.9
3298	Statuary and art goods (4)	18	47	288	928	2,386	1,401	97.3	55.1
11	Anthracite mining	268	\$ 8,516	22,965	\$ 93,734	\$218,964	\$112,193		
1111	Anthracite	233	7,825	22,265	91,109	211,115	108,115	95.7	100.0
1112	Anthracite stripping	23	659	573	2,172	6,803	3,299	90.8	100.0
1119	Anthracite reclaimed from streams	12	32	127	453	1,046	779	100.0	100.0
12	Bituminous mining	879	41,902	44,184	226,317	493,154	367,450	99.9	99.9
1211	Bituminous coal	879	41,902	44,184	226,317	493,154	367,450	99.9	99.9
14	Mining and quarrying of non-metallic minerals, except fuels	230	6,902	7,605	26,342	79,017	55,412		
1414	Dimension slate	3	2	36	127	194	151	95.4	100.0
1417	Dimension sandstone	8	8	76	202	540	329	95.4	100.0
1419	Dimension stone, n.e.c.	5	8	54	188	367	284	97.5	100.0
1422	Crushed and broken limestone (5)	80	3,414	4,815	13,773	39,615	27,978	98.1	98.7
1426	Crushed and broken trap rock	12	195	406	1,944	5,718	3,264	99.1	100.0
1427	Crushed and broken sandstone	12	135	186	861	2,905	2,285	100.0	100.0
1429	Crushed and broken stone, n.e.c.	5	426	144	611	3,669	1,674	100.0	98.8
1441	Sand and gravel industry	72	2,346	1,519	7,235	21,596	16,383	94.6	100.0
1453	Fire clay industry	24	210	287	1,080	3,028	2,207	90.4	100.0
1459	Clay, ceramic and refractory minerals, n.e.c. (6)	9	158	82	321	1,385	857	98.0	100.0

Detail may not add to total because of rounding.

(a) The ratio of primary production to total value of products in this industry, both primary and secondary.

(b) The ratio of primary production in this industry to the total value of the products primary to the industry, both in this and other industries.

(1) Also includes industry 3261, vitreous plumbing fixtures, and industry 3263, earthenware food utensils.

(2) Also includes industry 3265, china decorating for the trade.

(3) Also includes industry 3272, gypsum products, and industry 3275, mineral wool.

(4) Also includes industry 3299, nonmetallic mineral products, n.e.c.

(5) Also includes industry 1423, crushed and broken granite, and 1424, crushed and broken slate.

(6) Also includes industry 1469, natural abrasives, except sand, and 1496, talc, soapstone, and pyrophyllite.

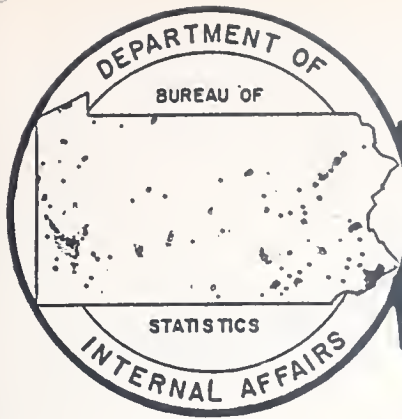
Source: Department of Internal Affairs, Bureau of Statistics, Release No. M-4.

TABLE 11: SHIPMENTS OF CRUDE PETROLEUM PRODUCED IN PENNSYLVANIA AND NUMBER OF WELLS CONNECTED, BY COUNTY: 1955, 1956, AND 1957

County	Shipments of crude petroleum (in 42 gallon barrels)			Number of wells connected		
	1955	1956	1957	1955	1956	1957
Total	9,253,018	8,751,798	8,585,988	70,710	69,346	68,151
Allegheny	134,890	127,616	132,515	481	470	458
Armstrong	15,471	14,937	13,810	201	201	197
Beaver	16,037	18,152	15,966	178	182	182
Butler	224,748	216,481	197,154	2,756	2,739	2,689
Clarion	58,752	54,096	53,040	1,357	1,304	1,248
Crawford	58,240	55,937	51,074	672	649	618
Elk	32,346	32,139	30,331	705	705	705
Fayette	436	419	392	5	5	4
Forest	161,838	158,404	152,919	1,089	1,077	1,059
Greene	61,884	65,164	64,310	356	345	321
Indiana	315	-	-	1	1	1
Jefferson	4,965	4,490	3,938	103	103	94
Lawrence	-	-	-	-	-	-
McKean	7,090,225	6,680,366	6,616,422	32,553	31,262	31,021
Mercer	5,294	4,818	4,719	237	237	229
Potter	81,100	116,662	95,233	215	418	418
Tioga	2,353	1,696	1,074	16	16	16
Venango	676,460	630,119	615,020	19,569	19,404	18,732
Warren	440,572	377,718	352,533	9,283	9,301	9,256
Washington	187,092	192,584	185,538	933	927	903

Source: Bureau of Statistics, Pennsylvania Department of Internal Affairs.





**SPECIAL RELEASE**

DEPARTMENT OF  
INTERNAL AFFAIRS  
Genevieve Blatt, Secretary

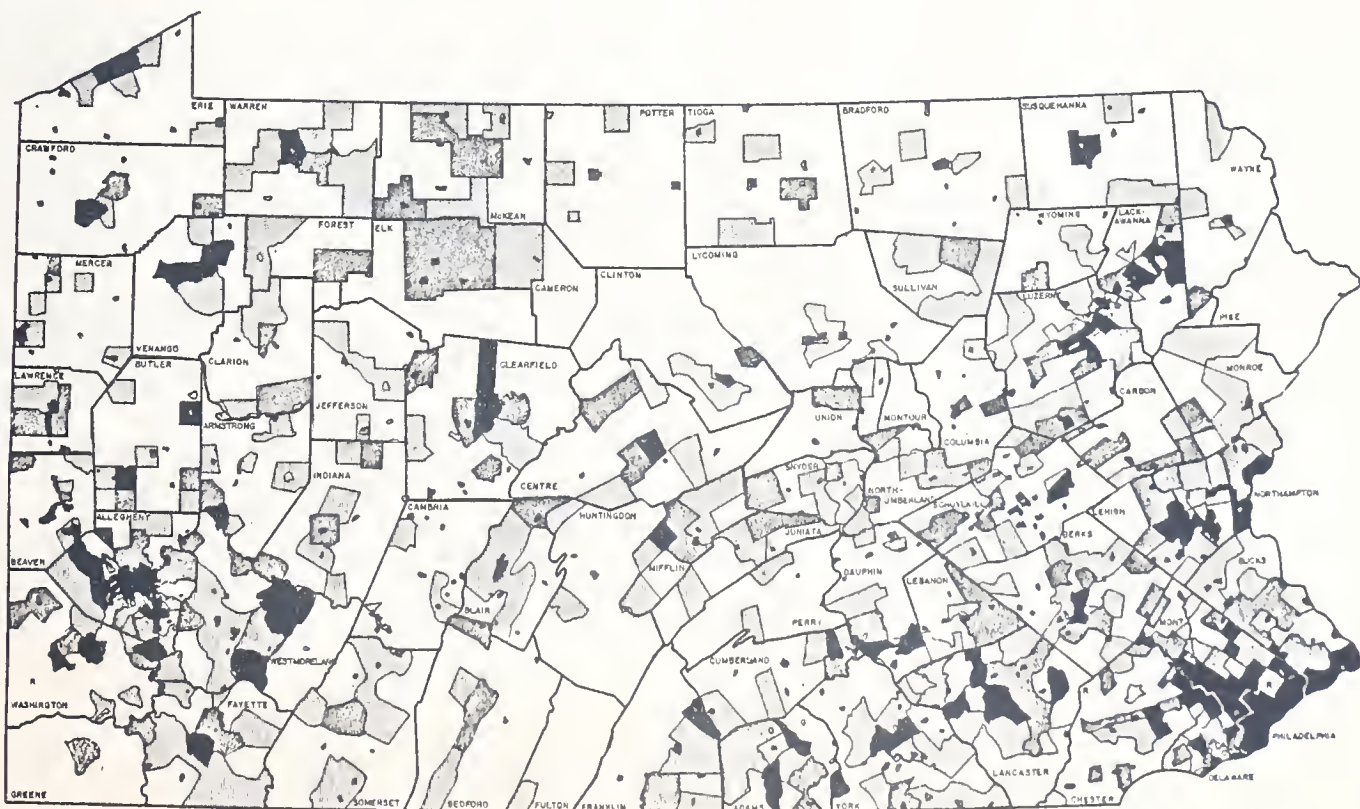
BUREAU OF STATISTICS  
Kenneth Masters, Director  
Elmer Larson, Asst. Director  
Robert Wingard, Public Utilities Div.  
Frank Krizan, Graphic Analysis  
Ruth DeShong, Tabular Presentation

JUNE 1960

RELEASE NO. S-6

# MANUFACTURING EMPLOYMENT IN URBAN, SUBURBAN, AND RURAL PLACES IN PENNSYLVANIA

## MANUFACTURING EMPLOYMENT FOR MUNICIPALITIES IN PENNSYLVANIA



NUMBER OF EMPLOYEES  
■ 500 and over  
▨ 100 to 499  
▤ 20 to 99  
□ 0 to 19



## LIST OF PUBLICATIONS PREPARED BY THE BUREAU OF STATISTICS

NOTE: The first five publications should be purchased directly from the Division of Documents, Post Office Box 41, Harrisburg, Pennsylvania. Other releases can be obtained directly from the Bureau of Statistics, Department of Internal Affairs, Harrisburg, Pennsylvania.

### 1. 1959 PENNSYLVANIA STATISTICAL ABSTRACT:

Statistics, explanatory notes, and information on statistical sources are presented in 24 sections: (1) Population, Income, and Religion; (2) Education; (3) Area, Geography, and Climate; (4) Parks and Recreation; (5) Vital Statistics; (6) Accidents; (7) Hospitals and Hospitalization; (8) Social Insurance and Welfare Services; (9) Law Enforcement, Courts, and Prisons; (10) The Legislature, Elections, and Registration; (11) State Government; (12) Local Government; (13) Municipal, Housing, and Redevelopment Authorities; (14) Prices; (15) Labor Force, Employment, and Earnings; (16) Agriculture; (17) Mineral Production; (18) Construction; (19) Manufacturing; (20) Transportation; (21) Communications and Public Utilities; (22) Distribution and Services; (23) Banking and Finance; (24) Military and Veterans Affairs. There are 174 tables and 27 graphs and map diagrams. 168 pages. Price \$1.50 (Copies of the 1958 Pennsylvania Statistical Abstract are still available at a price of \$1.00).

### 2. THE 1959 INDUSTRIAL DIRECTORY OF THE COMMON-WEALTH OF PENNSYLVANIA (15th Edition)

Based on 1957 information. Names, addresses, and number of employees for all manufacturing and mineral establishments, and for selected utilities. Manufacturing and mineral establishments are listed twice--by industry (Standard Industrial Classifications) in a statewide listing, and by industry and county in a county section. 834 pages. Price \$7.50.

### 3. 1959 ALPHABETICAL DIRECTORY TO INDUSTRIAL ESTABLISHMENTS:

This release is a supplement to the 1959 Industrial Directory. All manufacturing plants and establishments producing minerals other than fuels in Pennsylvania in 1957 are listed alphabetically, and the four-digit industrial classification (SIC) is given for each establishment. 43 pages. Price \$2.00

### 4. PENNSYLVANIA MUNICIPAL AUTHORITIES:

The names, addresses, dates of incorporation, and dates and amounts of bond issues for all municipal authorities in Pennsylvania in January, 1959. Price 50 cents.

### 5. Supplement to the 1959 Industrial Directory. Contains information for 1958 on new establishments, companies terminating operations, plants changing locations, company name changes, and changes in industry codes. 85 pages. Price \$2.00.

### 6. THE 1960 INDEX OF STATISTICAL SOURCES FOR PENNSYLVANIA:

A listing of statistical releases published by Commonwealth of Pennsylvania agencies and by selected federal and non-governmental agencies.

### 7. RELEASES BASED ON THE 1958 INDUSTRIAL, PUBLIC UTILITY, AND MUNICIPAL AUTHORITY CENSUSES:

- M-1 1958 Statistics for Manufacturing and Mineral Industries in Pennsylvania
- M-2 1958 Statistics by Major Industry Group for Counties and Urban Places (Individual copies of specified counties sent free of charge.)
- M-3 1958 Statistics for Urban Fringe Areas.
- M-4 1958 Statistics by Industry (Statistics for four-digit manufacturing and mineral industries.)
- M-5 1958 Statistics for Manufacturing Industries by Size of Establishment.

- U-1 1958 Statistics for Electric Utilities.
- U-2 1958 Statistics for Gas Utilities.
- U-3 1958 Statistics for Telephone Utilities.
- U-4 1958 Statistics for Water Utilities (Including Water Authorities).
- U-5 1958 Statistics for Sewer Authorities.
- U-6 1958 Statistics for Motor Bus and Electric Transportation Carriers.
- U-7 1958 Statistics for Railroads and Railroad Repair Establishments.
- A-1 1958 Statistics for Municipal Authorities.

### 8. RELEASES BASED ON THE 1956 AND 1957 INDUSTRIAL AND PUBLIC UTILITY CENSUSES: (A limited supply of these releases are still available.)

#### 1957 Releases

- M-1 1957 Statistics for Manufacturing and Mineral Industries in Pennsylvania.
- M-2 1957 Statistics by Major Industry Group for Counties and Urban Places (Individual copies of specified counties sent free of charge).
- M-3 1957 Statistics for Urban Fringe Areas.
- M-4 1957 Statistics by Industry (Statistics for four-digit manufacturing and mineral industries.)
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- U-1 1957 Statistics for Electric Utilities.
- U-2 1957 Statistics for Gas Utilities.
- U-3 1957 Statistics for Telephone Utilities.
- U-4 1957 Statistics for Water Utilities (Including Water Authorities)
- U-5 1957 Statistics for Sewer Authorities.
- U-7 Statistics for Railroads and Railroad Repair Establishments.

#### 1956 Releases

- M-1 General Statistics for Manufacturing and Mineral Industries for the State, Counties and Urban Places.
- M-3 General Statistics for Industrial Urban Fringe Areas.
- U-1 Statistics for Electric Utilities.
- U-2 Statistics for Gas Utilities.
- U-3 Statistics for Telephone Utilities.
- U-4 Statistics for Water Utilities (Including Water Authorities), and U-5
- U-6 Statistics for Sewer Authorities.
- U-7 Statistics for Railroads and Railroad Repair Establishments.

### 9. SPECIAL RELEASES:

- S-1 Leading Manufacturing Counties in Pennsylvania.
- S-2 Industrial Statistics for Pennsylvania, 1951 to 1955.
- S-3 Industrial Statistics for Pennsylvania, 1916 to 1956.
- S-4 Capital Investment for Manufacturing and Mineral Industries in Pennsylvania, 1956.
- S-5 Mineral Statistics for Pennsylvania.
- 56-5 Geographic Shifts in the Location of Pennsylvania Industry, 1950-1955.
- 57-3 Industry Change in Pennsylvania, 1954-1955.
- P-1 County and City Population Estimates for Pennsylvania.
- P-2 County Population Estimates for Pennsylvania by Age and Sex.
- P-3 County Population Estimates--Notes on Methodology.
- P-4 Local Population Estimates in Pennsylvania.

RELEASE S-6: MANUFACTURING EMPLOYMENT IN URBAN, SUBURBAN, AND RURAL PLACES IN PENNSYLVANIA

CONTENTS

	<u>Page</u>
INTRODUCTION. . . . .	2
PURPOSE OF THIS RELEASE . . . . .	2
PRESENT POLICY REGARDING GEOGRAPHIC AREA TABULATIONS . . . . .	2
DEFINITIONS . . . . .	2
SEQUENCE OF TABULAR AND GRAPHIC PRESENTATION . . . . .	3
CONCLUSIONS . . . . .	3
Figures 1 through 4: Manufacturing Employment for Municipalities	
Figure 1: Southwest Pennsylvania . . . . .	4
Figure 2: Northwest Pennsylvania . . . . .	20
Figure 3: Northeast Pennsylvania . . . . .	24
Figure 4: Southeast Pennsylvania . . . . .	32

Table 1: Number of Manufacturing Establishments and Employees by Size of Establishment for Municipalities in Pennsylvania, by County: 1958

<u>County</u>	<u>Page</u>	<u>County</u>	<u>Page</u>	<u>County</u>	<u>Page</u>	<u>County</u>	<u>Page</u>
Adams . . . . .	5	Clinton . . . . .	16	Lackawanna . . . . .	25	Pike . . . . .	37
Allegheny . . . . .	5	Columbia . . . . .	16	Lancaster . . . . .	26	Potter . . . . .	37
Armstrong . . . . .	7	Crawford . . . . .	17	Lawrence . . . . .	27	Schuylkill . . . . .	37
Beaver . . . . .	7	Cumberland . . . . .	17	Lebanon . . . . .	27	Snyder . . . . .	38
Bedford . . . . .	8	Dauphin . . . . .	18	Lehigh . . . . .	28	Somerset . . . . .	39
Berks . . . . .	8	Delaware . . . . .	18	Luzerne . . . . .	29	Sullivan . . . . .	39
Blair . . . . .	9	Elk . . . . .	19	Lycoming . . . . .	30	Susquehanna . . . . .	40
Bradford . . . . .	10	Erie . . . . .	21	McKean . . . . .	30	Tioga . . . . .	40
Bucks . . . . .	10	Fayette . . . . .	21	Mercer . . . . .	31	Union . . . . .	41
Butler . . . . .	12	Forest . . . . .	22	Mifflin . . . . .	31	Venango . . . . .	41
Cambria . . . . .	12	Franklin . . . . .	22	Monroe . . . . .	33	Warren . . . . .	41
Cameron . . . . .	13	Fulton . . . . .	22	Montgomery . . . . .	33	Washington . . . . .	42
Carbon . . . . .	13	Greene . . . . .	23	Montour . . . . .	35	Wayne . . . . .	43
Centre . . . . .	13	Huntingdon . . . . .	23	Northampton . . . . .	35	Westmoreland . . . . .	43
Chester . . . . .	14	Indiana . . . . .	23	Northumberland . . . . .	36	Wyoming . . . . .	44
Clarion . . . . .	15	Jefferson . . . . .	25	Perry . . . . .	36	York . . . . .	45
Clearfield . . . . .	15	Juniata . . . . .	25	Philadelphia . . . . .	36		

APPENDIX

	<u>Page</u>
Table A: Employment in Manufacturing Industries in Pennsylvania by Size of Establishment, by County: 1958 . . . . .	46
Table B: Comparison of the Results of the Tabulation Check with the Results of the 1958 Census of Manufacturing Industries, by County: 1958 . . . . .	47
Table C: Number of Municipalities by Size of Municipality in Pennsylvania, by County: 1958 . . . . .	48
Table D: Number of Manufacturing Establishments in Municipalities with Manufacturing Industry by Size of Municipality in Terms of Employment, by County: 1958 . . . . .	49
Table E: Number of Employees in Municipalities with Manufacturing Industry by Size of Municipality in Terms of Employment, by County: 1958 . . . . .	50

MANUFACTURING EMPLOYMENT IN URBAN, SUBURBAN, AND RURAL PLACES IN PENNSYLVANIA

**A. INTRODUCTION:**

This report presents data collected in the 1958 Industrial Census of Pennsylvania by the Bureau of Statistics in the Department of Internal Affairs. Statistics from the 1958 Census cover manufacturing establishments in Pennsylvania having production in 1958 of \$1,000 or more. Separate report forms were required from all manufacturing establishments in the State as authorized by the Act of April 20, 1921, P.L. 193. The 1958 Industrial Census of Pennsylvania covers all establishments primarily engaged in manufacturing as defined by the Standard Industrial Classification Manual, Volumes I and II as amended by the Federal Bureau of the Budget, except as noted. Completeness of coverage and adequacy of classification are checked by field investigation and by cooperative interchange of information with state and federal agencies.

**B. PURPOSE OF THIS RELEASE:**

This release is the result of a special tabulation project in the Bureau of Statistics in which all manufacturing establishments in Pennsylvania were classified by municipality and by place name, the number of establishments were enumerated, and employment was tabulated by size of establishment. This tabulation project was designed to serve a number of purposes:

1. To determine the extent and distribution of manufacturing in suburban and rural geographic locations in Pennsylvania
2. To investigate the adequacy and accuracy of the Bureau's system of geographic classifications, specifically urban and urban fringe areas
3. To review the Bureau's policy regarding published tabulations for geographic areas
4. To provide an overall quality check on the editing, filing, key punching, and tabulating practices of the Industry Division of the Bureau of Statistics.

**C. PRESENT POLICY REGARDING GEOGRAPHIC AREA TABULATIONS:**

The Bureau of Statistics normally publishes statistics for four types of geographic tabulations. The four types of geographic areas are:

1. The state. Detailed data are published for major industry groups in release M-1; summary data for detailed (four-digit SIC) industries are published in release M-4.
2. and 3. Counties and urban places. Summary data for all manufacturing industries in the counties and urban places are presented in release M-1; summary statistics by major (two-digit SIC) industries are presented in release M-2. Urban places refer to 94 cities and boroughs and one town (Bloomsburg) which are generally important industrial centers (either absolutely or relative to the total industry in the county in which they are located) and which have sufficient industrial activity so that publishing results for the urban place would not be tantamount to revealing the activity of one or two dominant manufacturing companies.
4. Industrial urban fringe areas. These areas consist of municipalities (cities, boroughs, and townships) located in ten major industrial urbanized areas. These areas were based on the urban fringe areas delineated in the 1950 Census of Population but differ in three respects: (1) all of a municipality is included in the urban fringe and not parts of municipalities as in the 1950 census definition; (2) the area has "significant" manufacturing activities, or is surrounded by municipalities with manufacturing activities; and (3) the industrial urban fringe is generally more expansive than the Census urban fringe, partially due to the location of manufacturing industries beyond densely populated residential suburbs, and partially because new suburban growth has taken place since 1950. The industrial urban fringe tabulations are published in release M-3. A complete listing of municipalities and place names in the industrial urban fringe is included in that release.

Six municipalities, four of them tabulated urban places, cross county lines. These municipalities are:

<u>Name of municipality</u>	<u>Counties in which located</u>
Bethlehem	Lehigh-Northampton
Ellwood City	Beaver-Lawrence
Telford	Bucks-Montgomery
Shippensburg	Cumberland-Franklin
McDonald	Washington-Allegheny
New Kensington	Westmoreland-Allegheny

**D. DEFINITIONS:**

1. A manufacturing establishment or plant is defined as a single physical location where inorganic or organic substances are transformed into new products by mechanical or chemical processes; for example, a factory, mill, or plant. An establishment is not necessarily identical with the business concern or firm which may consist of one or more establishments.

Central administrative offices and auxiliary units such as storage warehouses, research laboratories, and repair shops which operate as separate establishments of a company are not included in the Industrial Census.

2. Total employment includes all production and related workers, and all non-production personnel including force-account construction employees on the payroll engaged in construction of major additions or alterations to the plant. Officers of corporations are included; proprietors or partners of unincorporated concerns are not included. The 1958 employment figures are an average of the number of employees who worked or received pay for the periods ending the nearest 15th of March, May, August, and November.

3. Municipalities are legal governmental entities consisting of cities, boroughs, townships, and one town into which all Pennsylvania is divided. Municipalities are mutually exclusive in their geographical territory. Municipal location of a manufacturing establishment is determined on the basis of a question on the Census of Manufacturing Industries report form:

**ITEM 1 NAME, PHYSICAL LOCATION, AND MAILING ADDRESS OF ESTABLISHMENT**

- A. Name of establishment .....
- B. Physical location of establishment (may differ from mailing address)
1. Street and number .....
  2. City, boro, or twp. .... 3. County .....
- C. Office mailing address (if different from B)
1. Street and number .....
  2. City, boro, or twp. .... 3. County .....

4. Place names and post office addresses often differ from the name of the municipality in which the manufacturing plant is located. These names are frequently given in response to the question asking for the name of the municipality in which the plant is located. In this release, establishment reports with place names or post office addresses given in place of the name of the municipality have been classified according to the municipality and the place names have been listed separately under the municipality. In the study, there were 95 establishments with rural delivery post office addresses which could not be assigned to a municipality.

5. Tabulated municipalities consist of 49 of the 51 cities in the state, 45 boroughs, and one town for which the Bureau currently publishes industrial statistics. These municipalities are also referred to as "urban places". See section C-3 above for additional comments about these areas.

6. Urban fringe areas are defined and discussed in Section C-4.



## E. SEQUENCE OF TABULAR AND GRAPHIC PRESENTATION:

The number of manufacturing establishments, total employment, and employment by size of plant (based on number of employees) by municipality and county are shown in Table 1. Counties are presented alphabetically. Municipal data are presented for: (1) tabulated cities and boroughs, (2) boroughs, (3) townships and place names, and (4) rural delivery areas which could not be classified by municipality. Data for place names and post office addresses classified within municipalities are presented separately on the line or lines following the municipality. Municipalities in the urban fringe area are footnoted.

Summary data are presented in five appendix tables.

Four regional maps showing municipalities by total manufacturing employment size are presented on pages 4, 20, 24, and 32.

## F. CONCLUSIONS:

1. To what extent is manufacturing distributed in urban, suburban, and rural municipalities in Pennsylvania? The table below presents a summary for the state by type of municipality and by size of municipality in terms of employment.

Over 62 percent of the employees in manufacturing plants in Pennsylvania worked in plants located in urbanized areas--38.6 percent of the total employment in the state was in urbanized area centers, 7.1 percent was in tabulated municipalities in urban fringe areas, and 16.4 percent was in other municipalities in the urban fringe. All except 3.7 percent of total manufacturing employment was in municipalities with 1,000 or more employees in the urbanized areas.

Outside the ten urbanized areas there were 1,459 municipalities with 7,135 plants and 510,011 employees. Slightly less than 38 percent of all manufacturing employees worked in establishments located outside the ten major urbanized areas--15.2 percent in 59 tabulated municipalities and 22.8 percent in 1,400 other municipalities. Only five of the tabulated municipalities not in urbanized areas had fewer than 1,000 employees. By contrast, there were 4,319 plants in 1,327 non-tabulated municipalities with fewer than 1,000 employees. Employment in these municipalities accounted for 12.7 percent of the total manufacturing employment in the state.

2. How adequate and accurate are the presently employed urban and urban fringe area tabulations?

Although the presently employed urban tabulations include almost all industry in the state located in densely populated or built-up areas, some municipalities with only a slight amount of manufac-

turing have been tabulated because they comprise a large percentage of all manufacturing employment in the county or, in some cases, are the most important manufacturing municipality in the county. Other municipalities with more manufacturing located in more densely populated counties have not been tabulated. A further investigation reveals that many of these municipalities cannot be tabulated without revealing data for a single large manufacturer.

The study revealed a number of plants which were located within the urban fringe but which were not included in the urban fringe tabulations. A more serious problem is presented in attempting to define criteria for which municipalities shall be included in the urban fringe. An analysis of density of manufacturing employment per square mile, commuting patterns and population data from the 1960 Census of Population may lead to specific and stable criteria.

3. What changes in the Bureau's policy regarding published tabulations for geographic areas should be made?

An answer to this question will be based on information about uses of data tabulated for different types of geographic areas. One solution in regard to the smaller municipalities may lie in publishing more non-confidential information on establishments and employment which can be easily hand tabulated for special informational releases.

4. What evidence did the special tabulation project reveal regarding the quality of editing, filing, key punching, and tabulation practices of the Industrial Division of the Bureau of Statistics.

Comparisons shown in Appendix Table B indicate that differences between the original county totals and those on this project are only slight.

There were a number of reasons for the absolute differences in the counts of plants and employees by county. The most frequent error detected was in the county and urban fringe classifications. A few reports were found to have been classified in the wrong county. Many reports with place names for localities in urban fringe townships were not classified as being in urban fringe areas. Reports for these locations were added to the urban fringe.

A few reports received after the original tabulations were completed have been included in this release.

## NUMBER OF MUNICIPALITIES, MANUFACTURING ESTABLISHMENTS, AND EMPLOYEES BY SIZE AND TYPE OF MUNICIPALITY IN PENNSYLVANIA: 1958

(The 218 manufacturing establishments located in 102 rural delivery and other unclassifiable areas are not included in this table. These plants employed 3,109 persons in 1958.)

Size of municipalities (in number of manufacturing employees)	Total, all municipalities			Tabulated municipalities not in urbanized areas			Non-tabulated municipalities not in urbanized areas		
	Places	Plants	Employees	Places	Plants	Employees	Places	Plants	Employees
Total, the state	1,738	15,770	1,342,565	59	1,967	204,500	1,400	5,168	305,511
0-19 employees	556	833	3,599	--	--	--	531	783	3,391
20-99 employees	408	1,184	21,847	--	--	--	364	1,028	19,330
100-499 employees	411	2,207	97,490	2	30	617	335	1,637	78,642
500-999 employees	140	1,476	100,224	3	56	2,339	97	871	68,754
1,000-4,999 employees	186	3,138	404,342	43	1,232	110,563	71	836	122,682
5,000-9,999 employees	22	815	152,775	9	478	62,168	2	13	12,712
10,000 and over employees	15	7,117	562,288	2	171	28,813	--	--	--

Size of municipalities (in number of manufacturing employees)	Tabulated municipalities-- urbanized area centers			Tabulated municipalities in the urban fringe			Other municipalities in the urban fringe		
	Places	Plants	Employees	Places	Plants	Employees	Places	Plants	Employees
Total, the state	13	7,012	518,168	23	616	94,767	243	2,007	219,619
0-19 employees	--	--	--	--	--	--	25	50	208
20-99 employees	--	--	--	--	--	--	44	156	2,517
100-499 employees	--	--	--	1	21	412	73	519	17,819
500-999 employees	--	--	--	1	19	568	39	530	28,563
1,000-4,999 employees	1	12	4,816	14	334	36,755	57	724	129,526
5,000-9,999 employees	2	146	17,182	5	153	32,232	4	25	28,481
10,000 and over employees	10	6,854	496,170	2	89	24,800	1	3	12,505



Figure 1  
**MANUFACTURING EMPLOYMENT FOR MUNICIPALITIES IN  
 SOUTHWEST PENNSYLVANIA**

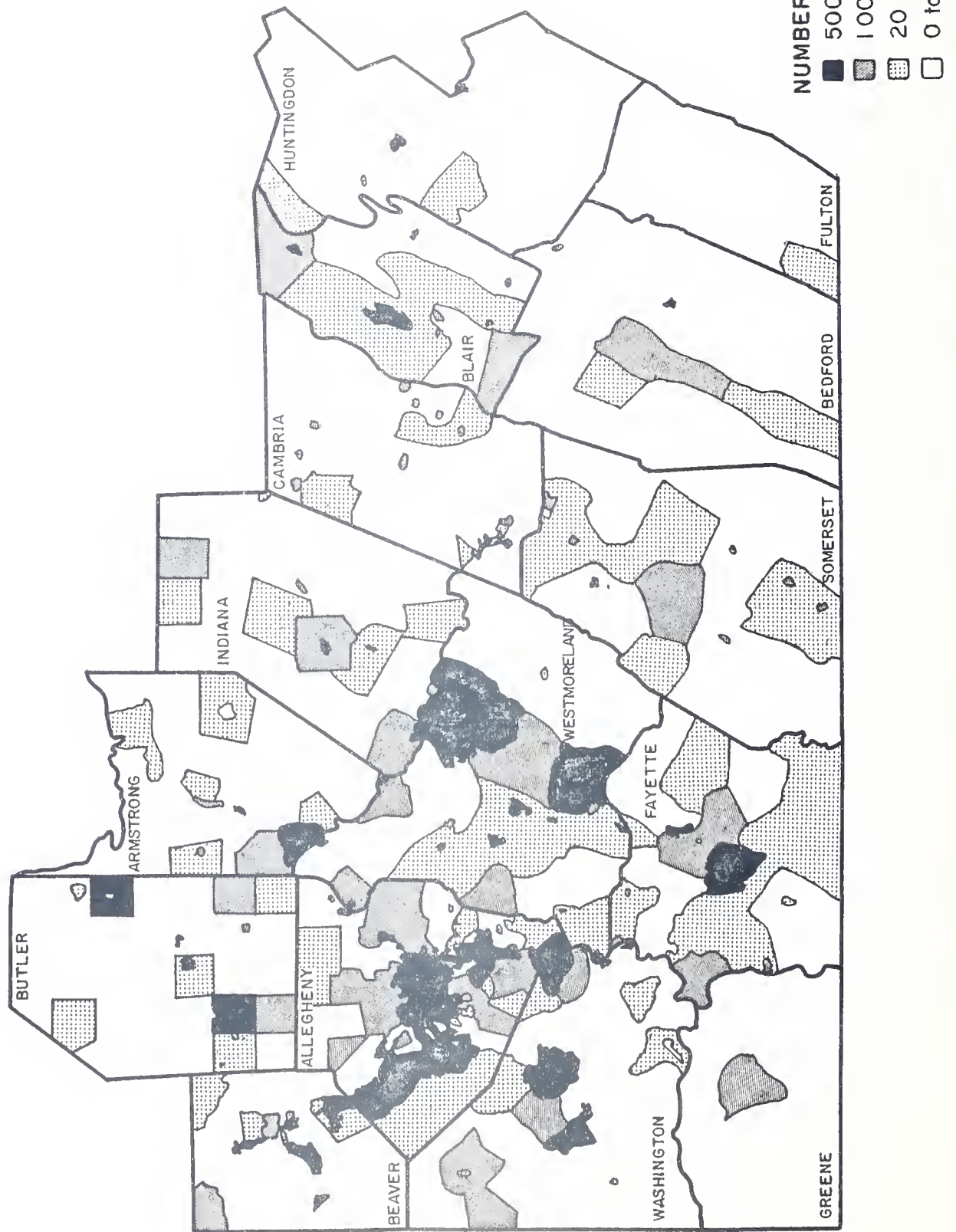


TABLE 1: NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					500 and over employees
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	
Adams County, total	97	6,549	336	1,412	1,300	2,838	663
<b>Boroughs</b>							
Abbottstown	2	29	2	27	-	-	-
Arendtsville	1	0	0	-	-	-	-
Bendersville	1	43	-	43	-	-	-
Biglerville	6	594	32	-	164	398	-
East Berlin	3	115	14	101	-	-	-
Fairfield	3	119	19	-	100	-	-
Gettysburg	16	908	41	442	425	-	-
Littlestown	16	1,389	64	157	119	1,049	-
McSherrystown	5	478	5	132	-	341	-
New Oxford	6	202	11	80	111	-	-
York Springs	1	20	-	20	-	-	-
<b>Townships</b>							
Butler	2	7	7	-	-	-	-
(Table Rock)	1	3	3	-	-	-	-
Conewago	1	69	-	69	-	-	-
Cumberland	2	680	17	-	-	-	663
Franklin	1	1	1	-	-	-	-
Germany	4	233	11	122	100	-	-
Hamiltonban	2	3	3	-	-	-	-
(Greenstone)	1	71	-	71	-	-	-
(Iron Springs)	1	3	3	-	-	-	-
(Orrtana)	1	179	-	-	179	-	-
Menallen	5	65	24	41	-	-	-
(Aspers)	3	369	4	27	-	338	-
Mount Pleasant	2	27	27	-	-	-	-
Oxford	2	158	-	56	102	-	-
Straban	2	37	13	24	-	-	-
Tyrone	-	-	-	-	-	-	-
(Gardners)	2	235	2	-	-	233	-
(Peach Glen)	1	479	-	-	-	479	-
<b>Rural delivery</b>							
Abbottstown	1	2	2	-	-	-	-
Gettysburg	3	31	31	-	-	-	-
Allegheny County, total	1,592	169,879	6,584	16,451	11,713	22,838	112,293
<b>Tabulated cities and boroughs</b>							
Braddock (1)	19	4,473	59	339	291	248	3,536
Carnegie (1)	19	1,006	75	140	480	311	-
Coraopolis (1)	8	1,346	26	82	128	-	1,110
McKeesport (1)	41	8,693	178	422	312	1,155	6,626
McKees Rocks (1)	36	2,982	99	381	700	723	1,079
Pittsburgh	937	62,610	3,988	9,415	6,094	12,371	30,742
Sharpsburg (1)	19	568	140	127	-	301	-
Wilkinsburg (1)	21	412	108	204	100	-	-
<b>Cities</b>							
Clairton (1)	9	5,031	47	-	-	289	4,695
Duquesne (1)	8	4,660	52	21	-	-	4,587
<b>Boroughs</b>							
Aspinwall (1)	4	11	11	-	-	-	-
Avalon (1)	3	14	14	-	-	-	-
Bellevue (1)	5	82	17	65	-	-	-
Bethel (1)	8	124	62	62	-	-	-
Blawnox (1)	9	1,329	34	27	157	-	1,111
Bradford Woods	1	0	0	-	-	-	-
Brackenridge (1)	4	3,702	1	33	170	-	3,498
Brentwood (1)	4	67	44	23	-	-	-
Bridgeville (1)	15	854	86	119	127	-	522
Castle Shannon (1)	5	56	21	35	-	-	-
Chalfant (1)	2	48	19	29	-	-	-
Cheswick (1)	7	183	41	142	-	-	-
Crafton (1)	3	21	21	-	-	-	-
Dormont (1)	5	90	18	72	-	-	-
Dravosburg(1)	1	3,509	-	-	-	-	3,509
East McKeesport (1)	3	72	3	69	-	-	-
East Pittsburgh (1)	3	12,505	3	20	-	-	12,482
Edgeworth (1)	1	1	1	-	-	-	-
Elizabeth (1)	5	200	13	60	127	-	-
Emsworth (1)	2	31	1	30	-	-	-
Etna (1)	8	1,254	51	102	-	-	1,101
Glassport (1)	5	1,562	3	-	126	688	745
Glenfield (1)	2	8	8	-	-	-	-
Haysville (1)	1	86	-	86	-	-	-
Heidelberg (1)	2	281	0	-	-	281	-
Homestead (1)	12	154	40	114	-	-	-
Jefferson (1)	1	72	-	72	-	-	-
Leetsdale (1)	5	1,335	-	56	130	588	561
Liberty (1)	1	3	3	-	-	-	-

TABLE 1: NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Allegheny County							
Boroughs (continued)							
Millvale (1)	17	633	35	345	-	253	-
Monroeville (1)	7	76	76	-	-	-	-
Mount Lebanon (1)	2	14	14	-	-	-	-
Mount Oliver (1)	10	103	45	58	-	-	-
Munhall (1)	7	8,359	30	-	-	-	8,329
North Braddock (1)	3	75	19	56	-	-	-
Oakdale	3	41	9	32	-	-	-
Oakmont (1)	15	1,758	44	234	344	292	844
Pitcairn (1)	4	51	10	41	-	-	-
Pleasant Hills (1)	3	88	12	76	-	-	-
Port Vue	1	793	-	-	-	-	-
Rankin (1)	6	2,402	21	-	-	571	1,810
Rosslyn Farms (1)	4	619	-	24	225	370	-
Sewickley (1)	4	53	33	20	-	-	-
Springdale (1)	7	308	25	76	-	207	-
Swissvale (1)	15	3,142	68	235	171	-	2,668
Tarentum (1)	11	266	52	90	124	-	-
Turtle Creek (1)	1	2	2	-	-	-	-
Verona (1)	14	1,337	44	172	140	981	-
Versailles (1)	2	275	0	-	-	275	-
West Elizabeth (1)	4	224	13	44	167	-	-
West Homestead (1)	6	3,572	23	122	-	-	3,427
West Mifflin (1)	8	3,407	41	105	-	-	3,261
West View (1)	3	17	17	-	-	-	-
Whitaker (1)	2	79	18	61	-	-	-
Wilmerding (1)	6	4,169	10	60	-	-	4,099
Townships and (place names)							
Baldwin	11	231	46	-	185	-	-
Collier	8	2,309	32	57	285	-	1,935
Crescent	-	-	-	-	-	-	-
(Glenwillard)	2	139	-	26	113	-	-
East Deer (1)	3	8	8	-	-	-	-
(Creighton)	3	2,545	11	-	-	222	2,312
(Glassmere)	1	53	-	53	-	-	-
Elizabeth	5	39	39	-	-	-	-
(Boston)	2	35	35	-	-	-	-
(Greenock)	1	16	16	-	-	-	-
Findlay	1	38	-	38	-	-	-
Forward	1	1,002	-	-	-	-	1,002
Franklin	-	-	-	-	-	-	-
(Ingomar)	1	146	-	-	146	-	-
Hampton (1)	3	242	14	-	-	228	-
(Allison Park)	1	1	1	-	-	-	-
Harmar (1)	2	74	2	72	-	-	-
Harrison (1)	3	139	1	138	-	-	-
(Natrona)	4	63	32	31	-	-	-
(Natrona Heights)	1	4	4	-	-	-	-
Jefferson	1	86	-	86	-	-	-
(Large)	1	56	-	56	-	-	-
Kilbuck (1)	1	163	-	-	163	-	-
(Neville Island)	7	704	11	115	-	578	-
Marshall (1)	1	17	17	-	-	-	-
(Warrendale)	1	0	0	-	-	-	-
McCandless	1	9	9	-	-	-	-
(Wexford)	2	8	8	-	-	-	-
Monongahela (1)	1	195	-	-	195	-	-
Moon	6	800	11	52	109	628	-
Neville (1)	6	1,525	7	163	-	229	1,126
(Neville Island)	6	3,295	-	123	-	239	2,933
North Fayette (1)	1	72	-	72	-	-	-
(Imperial)	1	4	4	-	-	-	-
(Noblestown)	1	7	7	-	-	-	-
North Versailles	3	29	8	21	-	-	-
(Trafford)	1	19	19	-	-	-	-
O'Hara	3	114	-	114	-	-	-
(Fairhaven)	1	2	2	-	-	-	-
Ohio	2	7	7	-	-	-	-
Patton (1)	1	5	5	-	-	-	-
Penn (1)	2	215	10	-	-	205	-
Penn Hills (1)	7	72	32	40	-	-	-
Plum	4	112	2	110	-	-	-
Reserve (1)	5	13	13	-	-	-	-
Rickland	1	5	5	-	-	-	-
(Bakerstown)	2	22	22	-	-	-	-
Robinson (1)	5	366	20	24	-	322	-
(Groveton)	2	292	9	-	-	283	-
Ross (1)	9	201	15	86	100	-	-
Scott (1)	5	1,355	18	139	-	-	1,198
(East Carnegie)	1	2	2	-	-	-	-
Shaler (1)	9	388	23	194	171	-	-
(Glenshaw)	5	738	16	70	-	-	652
Snowden	1	20	-	20	-	-	-
South Fayette	3	56	32	24	-	-	-
(Sturgeon)	1	2	2	-	-	-	-
Stowe (1)	8	314	27	154	133	-	-
Union (1)	1	21	-	21	-	-	-
West Deer	1	30	-	30	-	-	-
Wilkins	1	16	16	-	-	-	-
Whitehall	2	95	5	90	-	-	-
White Oak	1	2	2	-	-	-	-
Rural Delivery							
Crafton	1	2	2	-	-	-	-
McKeesport	1	0	0	-	-	-	-
Oakdale	1	34	-	34	-	-	-
Pitcairn	1	2	2	-	-	-	-
Richland	1	3	3	-	-	-	-
Tarentum	1	2	2	-	-	-	-

(1) Urban fringe

TABLE 1: NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Armstrong County, total	82	6,170	321	626	728	844	3,651
Boroughs							
Apollo	7	245	46	-	199	-	-
Dayton	1	3	3	-	-	-	-
Ford City	9	3,164	26	-	152	482	2,504
Freeport	4	4	4	-	-	-	-
Kittanning	14	427	81	189	157	-	-
Leechburg	3	17	17	-	-	-	-
North Apollo	3	13	13	-	-	-	-
Parker City	2	398	-	36	-	362	-
Rural Valley	2	3	3	-	-	-	-
Worthington	2	153	-	38	115	-	-
Townships							
Boggs	1	1	1	-	-	-	-
Cowanshannock	2	9	9	-	-	-	-
(Yatesboro)	2	22	22	-	-	-	-
East Franklin	2	171	-	171	-	-	-
(Cowansville)	2	3	3	-	-	-	-
Gilpin	1	1	1	-	-	-	-
(Schenley)	1	1,147	-	-	-	-	1,147
Mahoning	2	20	20	-	-	-	-
North Buffalo	1	1	1	-	-	-	-
Parks	2	40	7	33	-	-	-
Perry	1	1	1	-	-	-	-
Pine	-	-	-	-	-	-	-
(Templeton)	2	36	1	35	-	-	-
Rayburn	1	80	-	80	-	-	-
Redbank	1	4	4	-	-	-	-
South Buffalo	4	121	16	-	105	-	-
Valley	1	1	1	-	-	-	-
Wayne	2	4	4	-	-	-	-
West Franklin	4	55	11	44	-	-	-
Rural Delivery							
Kittanning	3	26	26	-	-	-	-
Beaver County, total	196	44,619	662	2,218	1,826	4,168	35,745
Tabulated cities and boroughs							
Aliquippa (1)	14	13,172	46	-	-	302	12,824
Ambridge	14	9,363	33	146	-	281	8,903
Beaver Falls (1)	38	2,170	97	573	720	780	-
Ellwood City	2	57	-	57	-	-	-
Boroughs							
Baden	3	27	27	-	-	-	-
Beaver (1)	7	193	29	50	114	-	-
Bridgewater (1)	3	223	-	89	134	-	-
Conway (1)	1	10	10	-	-	-	-
Darlington	2	184	-	20	164	-	-
East Rochester (1)	1	1	1	-	-	-	-
Eastvale	1	74	-	74	-	-	-
Fallston	3	572	-	105	-	467	-
Freedom (1)	2	243	-	45	198	-	-
Koppel	1	0	0	-	-	-	-
Midland	8	5,944	55	-	-	563	5,326
Monaca (1)	17	2,032	24	241	116	1,147	504
New Brighton (1)	25	561	134	325	102	-	-
New Galilee	2	119	1	-	118	-	-
Rochester (1)	14	716	55	252	-	409	-
West Mayfield (1)	2	3,309	12	-	-	-	3,297
Townships							
Big Beaver	1	14	14	-	-	-	-
Borough	1	1,650	-	-	-	-	1,650
(Vanport)	2	26	3	23	-	-	-
Center	2	4	4	-	-	-	-
Darlington	1	160	-	-	160	-	-
Daugherty (1)	1	13	13	-	-	-	-
(Geneva Hill)	1	43	-	43	-	-	-
Franklin	1	5	5	-	-	-	-
(Frisco)	2	86	9	77	-	-	-
Harmony (1)	3	1,148	19	-	-	-	1,129
Hopewell (1)	1	22	-	22	-	-	-
(West Aliquippa)	1	18	18	-	-	-	-
Industry	1	8	8	-	-	-	-
New Sewickley	2	4	4	-	-	-	-
Patterson (1)	3	15	15	-	-	-	-
Potter (1)	2	2,112	-	-	-	-	2,112
Pulaski	2	9	9	-	-	-	-
Rochester	2	80	4	76	-	-	-
(North Rochester)	2	222	3	-	-	219	-
Rural Delivery							
Beaver Falls	4	2	2	-	-	-	-
Beaver	1	8	8	-	-	-	-

(1) Urban fringe.



TABLE 1: NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

8

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Bedford County, total	46	1,224	154	344	250	476	-
Boroughs							
Bedford	4	109	0	109	-	-	-
Everett	8	585	46	63	-	476	-
Hopewell	1	22	-	22	-	-	-
New Paris	1	2	2	-	-	-	-
Saxton	3	167	2	40	125	-	-
Woodbury	2	7	7	-	-	-	-
Townships							
Bedford	1	125	-	-	125	-	-
Broad Top	1	2	2	-	-	-	-
Cumberland Valley	1	28	-	28	-	-	-
East Providence	-	-	-	-	-	-	-
(Breezewood)	1	1	1	-	-	-	-
East St. Clair	3	35	12	23	-	-	-
Hopewell	2	5	5	-	-	-	-
Juniata	1	13	13	-	-	-	-
King	-	-	-	-	-	-	-
(Osterburg)	1	5	5	-	-	-	-
Liberty	2	7	7	-	-	-	-
Londonderry	2	10	10	-	-	-	-
Monroe	-	-	-	-	-	-	-
(Clearville)	1	1	1	-	-	-	-
Southampton	2	6	6	-	-	-	-
South Woodbury	-	-	-	-	-	-	-
(Loysburg)	1	3	3	-	-	-	-
(New Enterprise)	1	12	12	-	-	-	-
(Waterside)	1	2	2	-	-	-	-
West St. Clair	1	0	0	-	-	-	-
(Alum Bank)	1	2	2	-	-	-	-
Rural delivery							
Bedford	2	10	10	-	-	-	-
Everett	2	65	6	59	-	-	-
Berks County, total	602	47,969	1,971	10,193	5,814	13,768	16,223
Tabulated city							
Reading	270	21,544	1,037	4,268	2,592	6,307	7,340
Boroughs							
Bally	6	429	12	139	278	-	-
Bechtelsville	2	401	-	-	177	224	-
Bernville	2	51	-	51	-	-	-
Birdsboro	8	1,379	21	139	-	-	1,219
Boyertown	28	2,597	53	512	415	1,075	542
Centreport	1	21	-	21	-	-	-
Fleetwood	12	504	7	371	126	-	-
Hamburg	29	2,397	88	584	161	1,564	-
Kenhorst (1)	3	18	18	-	-	-	-
Kutztown	12	1,214	19	255	394	546	-
Laureldale (1)	8	1,822	17	-	120	404	1,281
Leesport	3	450	10	74	-	366	-
Lyons	2	78	3	75	-	-	-
Mohnton (1)	12	992	-	380	236	376	-
Robesonia	5	506	20	-	-	486	-
Shillington (1)	10	364	57	121	186	-	-
Shoemakersville	8	471	30	166	275	-	-
Sinking Spring (1)	13	814	42	482	-	290	-
Strausstown	1	16	16	-	-	-	-
Temple (1)	10	234	58	176	-	-	-
Topton	8	927	40	76	-	-	811
Wernersville	2	7	7	-	-	-	-
West Lawn (1)	8	313	6	167	140	-	-
West Reading (1)	12	1,439	32	160	-	717	530
Womelsdorf	7	362	24	338	-	-	-
Wyomissing (1)	5	4,660	7	153	-	-	4,500
Townships							
Alsace	1	13	13	-	-	-	-
(Alsace Manor)	1	2	2	-	-	-	-
Amity	1	7	7	-	-	-	-
(Douglassville)	1	7	7	-	-	-	-
Bern	2	24	24	-	-	-	-
Bethel	2	13	13	-	-	-	-
Caernarvon	1	1	1	-	-	-	-
Centre	-	-	-	-	-	-	-
(Mohrsville)	1	145	-	-	145	-	-
Colebrookdale	2	156	-	20	136	-	-
(Englesville)	1	26	-	26	-	-	-
(New Berlinville)	1	18	18	-	-	-	-
Cumru (1)	5	133	4	129	-	-	-
(Angelica)	1	1	1	-	-	-	-
Douglass	1	2	2	-	-	-	-
Exeter (1)	5	160	7	-	153	-	-
(Esterly)	2	84	-	84	-	-	-
(Reiffton)	3	20	20	-	-	-	-

TABLE 1: NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Berks County							
Townships (continued)							
Hereford	1	11	11	-	-	-	-
Longswamp	2	11	11	-	-	-	-
(Mertztown)	2	189	-	56	133	-	-
Lower Alsace (1)	-	-	-	-	-	-	-
(Stony Creek Mills)	3	89	16	73	-	-	-
Lower Heidelberg	1	1	1	-	-	-	-
Maidencreek	1	30	-	30	-	-	-
(Evansville)	1	303	-	-	-	303	-
Marion	2	3	3	-	-	-	-
(Stouchsburg)	1	3	3	-	-	-	-
Maxatawny	1	29	-	29	-	-	-
Muhlenburg (1)	19	1,179	43	276	147	713	-
(Hyde Park)	3	447	15	35	-	397	-
(Muhlenburg Park)	1	15	15	-	-	-	-
Oley	3	72	0	72	-	-	-
(Oley)	3	8	8	-	-	-	-
Ontelaunee	1	93	-	93	-	-	-
Perry	3	45	7	38	-	-	-
Richmond	1	1	1	-	-	-	-
(Virginville)	1	58	-	58	-	-	-
Robeson	2	7	7	-	-	-	-
Ruscombmanor	1	4	4	-	-	-	-
South Heidelberg	1	4	4	-	-	-	-
Spring	1	38	-	38	-	-	-
Tilden	-	-	-	-	-	-	-
(North Hamburg)	1	76	-	76	-	-	-
Tulpehocken	-	-	-	-	-	-	-
(Rehrersburg)	1	27	-	27	-	-	-
Union	2	10	10	-	-	-	-
(Monocacy)	2	48	0	48	-	-	-
Upper Bern	-	-	-	-	-	-	-
(Shartlesville)	2	8	8	-	-	-	-
Upper Tulpehocken	2	16	16	-	-	-	-
Washington	2	54	-	54	-	-	-
(Eshbach)	1	48	-	48	-	-	-
Rural delivery							
Bernville	1	2	2	-	-	-	-
Fleetwood	2	1	1	-	-	-	-
Reading	5	117	9	108	-	-	-
Sinking Spring (1)	5	93	26	67	-	-	-
Womelsdorf	1	3	3	-	-	-	-
Unknown	2	4	4	-	-	-	-
(1) Urban fringe							
Blair County, total							
Blair County, total	122	10,272	472	1,496	951	3,552	3,801
Tabulated city and borough							
Altoona	59	5,714	245	904	530	1,580	2,455
Tyrone	12	1,483	45	74	-	564	800
Boroughs							
Bellwood	3	47	6	41	-	-	-
Duncansville	1	265	-	-	-	265	-
Hollidaysburg	10	372	22	98	252	-	-
Martinsburg	5	429	18	-	-	411	-
Newry	1	44	-	44	-	-	-
Roaring Spring	4	591	20	-	169	402	-
Williamsburg	2	549	3	-	-	-	546
Townships							
Allegheny	2	13	13	-	-	-	-
(Spring Meadows)	1	63	-	63	-	-	-
Antis	-	-	-	-	-	-	-
(Tipton)	1	21	-	21	-	-	-
Blair	1	3	3	-	-	-	-
Frankstown	3	22	22	-	-	-	-
Greenfield	1	8	8	-	-	-	-
(Claysburg)	2	347	17	-	-	330	-
Logan	2	58	2	56	-	-	-
Snyder	6	143	23	120	-	-	-
Taylor	1	45	-	45	-	-	-
Woodbury	1	6	6	-	-	-	-
Rural delivery							
Duncansville	2	15	15	-	-	-	-
Martinsburg	2	34	4	30	-	-	-

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Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Bradford County, total	66	3,997	277	906	327	200	2,287
Boroughs							
Athens	3	1,070	7	60	-	-	1,003
Canton	9	326	37	126	163	-	-
Monroe	2	23	23	-	-	-	-
New Albany	2	213	13	-	-	200	-
Sayre	12	987	47	231	164	-	545
Towanda	5	140	18	122	-	-	-
Troy	6	165	30	135	-	-	-
Wyalusing	2	39	0	39	-	-	-
Townships							
Athens	2	19	19	-	-	-	-
Columbia	-	-	-	-	-	-	-
(Columbia Crossroads)	1	5	5	-	-	-	-
Monroe	1	5	5	-	-	-	-
North Towanda	2	741	2	-	-	-	739
Ridgebury	1	1	1	-	-	-	-
Sheshequin	1	1	1	-	-	-	-
Smithfield	-	-	-	-	-	-	-
(East Smithfield)	4	48	17	31	-	-	-
South Creek	-	-	-	-	-	-	-
(Gillett)	1	0	0	-	-	-	-
Stevens	1	2	2	-	-	-	-
Towanda	2	5	5	-	-	-	-
Troy	3	85	12	73	-	-	-
Tuscarora	1	31	-	31	-	-	-
West Burlington	1	0	0	-	-	-	-
Wyalusing	1	12	12	-	-	-	-
Wysox	2	73	15	58	-	-	-
Rural delivery							
Towanda	1	6	6	-	-	-	-
Bucks County, total	438	28,946	1,785	5,653	3,586	3,844	14,078
Tabulated city and borough							
Bristol (1)	26	2,287	81	353	267	573	1,013
Quakertown	42	2,708	104	729	1,288	587	-
Boroughs							
Chalfont	4	164	13	151	-	-	-
Doylestown	26	901	109	386	106	300	-
Dublin	3	271	7	41	-	223	-
Hulmeville (1)	4	102	25	77	-	-	-
Ivyland (1)	1	0	0	-	-	-	-
Langhorne (1)	3	14	14	-	-	-	-
Morrisville (1)	21	1,115	110	273	-	732	-
New Britain	2	28	6	22	-	-	-
New Hope	8	305	35	-	270	-	-
Newtown	5	198	16	-	182	-	-
Penn del (1)	8	153	53	100	-	-	-
Perkasie	28	1,114	127	473	226	288	-
Richlandtown	2	92	4	88	-	-	-
Riegelsville	2	139	-	32	107	-	-
Sellersville	12	1,993	14	178	128	260	1,413
Silverdale	3	170	-	170	-	-	-
Telford	3	91	16	75	-	-	-
Trumbauersville	7	146	51	95	-	-	-
Tullytown	5	64	41	23	-	-	-
Yardley (1)	7	201	41	-	160	-	-
Townships							
Bedminster	4	56	22	34	-	-	-
(Bedminster)	2	1	1	-	-	-	-
Bensalem (1)	3	114	2	-	112	-	-
(Andalusia)	5	48	48	-	-	-	-
(Bensalem)	1	25	-	25	-	-	-
(Cornwells Heights)	9	1,540	34	95	-	425	986
(Croydon)	3	87	11	76	-	-	-
(Eddington)	12	379	56	323	-	-	-
(Hunting Valley)	2	12	12	-	-	-	-
(Neshaminy Falls)	1	0	0	-	-	-	-
(Trevoise)	6	156	17	37	102	-	-
Bridgeton	-	-	-	-	-	-	-
(Upper Black Eddy)	1	4	4	-	-	-	-



TABLE 1: NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Bucks County							
Townships (continued)							
Bristol (1)	20	4,103	58	279	247	-	3,519
(Croydon)	2	1	1	-	-	-	-
(Edgely)	1	250	-	-	-	250	-
(Newportville)	1	3	3	-	-	-	-
(West Bristol)	1	0	0	-	-	-	-
Buckingham	4	60	18	42	-	-	-
(Furlong)	2	98	17	81	-	-	-
(Wycombe)	2	66	1	65	-	-	-
Doylestown	4	79	31	48	-	-	-
Durham	2	6	6	-	-	-	-
East Rockhill	1	3	3	-	-	-	-
Falls (1)	2	140	-	23	117	-	-
(Fairless Hills)	2	6,056	-	-	-	-	6,056
(Fallsington)	1	20	-	20	-	-	-
(Levittown)	1	157	-	-	157	-	-
Haycock	3	11	11	-	-	-	-
Hilltown	6	83	23	60	-	-	-
(Blooming Glen)	1	6	6	-	-	-	-
(Feasterville)	3	8	8	-	-	-	-
(Souderton)	1	46	-	46	-	-	-
Lower Southampton (1)	4	117	3	114	-	-	-
Middletown (1)	3	110	15	95	-	-	-
(Parkland)	1	19	19	-	-	-	-
Milford	4	48	24	24	-	-	-
(Spinnerstown)	2	5	5	-	-	-	-
New Britain	3	27	27	-	-	-	-
(Line Lexington)	2	76	16	60	-	-	-
Newtown	1	12	12	-	-	-	-
Nockamixon	-	-	-	-	-	-	-
(Ferndale)	1	0	0	-	-	-	-
(Revere)	1	0	0	-	-	-	-
Northampton	1	2	2	-	-	-	-
(Churchtown)	1	40	-	40	-	-	-
(Hatboro)	2	118	-	118	-	-	-
(Richboro)	3	54	31	23	-	-	-
Plumstead	1	10	10	-	-	-	-
(Danboro)	3	48	18	30	-	-	-
(Plumsteadville)	4	135	10	125	-	-	-
Richland	6	89	19	70	-	-	-
Solebury	4	28	28	-	-	-	-
(Solebury)	1	8	8	-	-	-	-
Springfield	3	19	19	-	-	-	-
(Springtown)	1	2	2	-	-	-	-
Tinicum	-	-	-	-	-	-	-
(Ottsville)	1	2	2	-	-	-	-
(Uhlerstown)	1	1	1	-	-	-	-
Upper Southampton (1)	1	58	-	58	-	-	-
(Davisville)	1	30	-	30	-	-	-
(Southampton)	13	266	65	201	-	-	-
Warminster (1)	5	1,419	10	112	-	206	1,091
(Warminster)	1	3	3	-	-	-	-
Warrington	3	16	16	-	-	-	-
(Neshaminy)	7	182	65	-	117	-	-
(Warrington)	1	8	8	-	-	-	-
Warwick	-	-	-	-	-	-	-
(Jamison)	1	0	0	-	-	-	-
West Rockhill	6	68	35	33	-	-	-
Rural delivery							
Chalfont	2	14	14	-	-	-	-
Doylestown	4	8	8	-	-	-	-
Ivyland	1	1	1	-	-	-	-
Perkasie	1	6	6	-	-	-	-
Pipersville	1	3	3	-	-	-	-
Quakertown	4	15	15	-	-	-	-
Sellersville	1	5	5	-	-	-	-

(1) Urban fringe

TABLE 1: NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Butler County, total	158	10,551	619	1,413	1,377	2,233	4,909
Tabulated city							
Butler	51	5,671	198	442	506	205	4,320
Boroughs							
Bruin	2	26	2	24	-	-	-
Callery	2	214	1	-	-	213	-
Chicora	2	6	6	-	-	-	-
Conoquenessing	1	1	1	-	-	-	-
East Butler	6	860	10	75	185	590	-
Eau Claire	1	3	3	-	-	-	-
Evans City	6	144	21	23	100	-	-
Harmony	4	76	26	50	-	-	-
Harrisville	3	9	9	-	-	-	-
Karns City	1	302	-	-	-	302	-
Mars	8	59	35	24	-	-	-
Portersville	2	83	-	83	-	-	-
Saxonburg	6	340	11	-	117	212	-
Slippery Rock	1	8	8	-	-	-	-
Valencia	1	2	2	-	-	-	-
West Sunbury	1	1	1	-	-	-	-
Zelienople	15	749	88	378	283	-	-
Townships							
Adams	6	130	24	106	-	-	-
(Downleville)	1	36	-	36	-	-	-
Brady	1	0	0	-	-	-	-
Buffalo	3	70	6	64	-	-	-
Butler	9	56	56	-	-	-	-
(Lyndora)	1	3	3	-	-	-	-
Center	2	11	11	-	-	-	-
Cranberry	1	9	9	-	-	-	-
Fairview	2	619	-	-	186	433	-
Forward	2	598	9	-	-	-	589
Franklin	1	7	7	-	-	-	-
Jackson	1	73	-	73	-	-	-
Lancaster	1	1	1	-	-	-	-
Mercer	1	2	2	-	-	-	-
Middlesex	2	18	18	-	-	-	-
Parker	3	11	11	-	-	-	-
Slippery Rock	2	40	5	35	-	-	-
(Branchton)	1	8	8	-	-	-	-
Venango	1	1	1	-	-	-	-
Washington	1	3	3	-	-	-	-
Winfield	-	-	-	-	-	-	-
(West Winfield)	1	278	-	-	-	278	-
Rural delivery							
Evans City	1	7	7	-	-	-	-
Branchton	1	16	16	-	-	-	-
Cambria County, total	156	20,782	706	1,379	472	2,701	15,524
Tabulated city							
Johnstown	70	18,453	292	802	219	1,616	15,524
Boroughs							
Barnesboro	8	253	39	-	-	214	-
Carrolltown	1	5	5	-	-	-	-
Cassandra	1	60	-	60	-	-	-
Cresson	2	57	15	42	-	-	-
Ebensburg	10	164	33	131	-	-	-
Ferndale	3	173	18	40	115	-	-
Gallitzin	2	295	3	-	-	292	-
Geistown	1	8	8	-	-	-	-
Hastings	2	74	2	72	-	-	-
Lilly	1	77	-	77	-	-	-
Lorain	1	28	-	28	-	-	-
Patton	6	435	23	-	138	274	-
Portage	4	330	25	-	-	305	-
South Fork	1	7	7	-	-	-	-
Southmont	1	13	13	-	-	-	-
Spangler	1	57	-	57	-	-	-
Westmont	1	3	3	-	-	-	-
Townships							
Adams	-	-	-	-	-	-	-
(Dunlo)	1	3	3	-	-	-	-
Barr	4	19	19	-	-	-	-
(Nicktown)	1	1	1	-	-	-	-
Black Lick	1	15	15	-	-	-	-
Cambria	3	6	6	-	-	-	-
Chest	1	5	5	-	-	-	-
Conemaugh	-	-	-	-	-	-	-
(Conemaugh)	1	10	10	-	-	-	-
Croyle	1	3	3	-	-	-	-
Dean	1	2	2	-	-	-	-
East Carroll	1	0	0	0	-	-	-
Jackson	1	4	4	-	-	-	-
Lower Yoder	2	18	18	-	-	-	-
Middle Taylor	1	3	3	-	-	-	-
Munster	2	58	9	49	-	-	-
Portage	4	36	15	21	-	-	-
Reade	-	-	-	-	-	-	-
(Blandburg)	1	5	5	-	-	-	-
Stonycreek	1	15	15	-	-	-	-
Summerhill	-	-	-	-	-	-	-
(Beaverdale)	1	18	18	-	-	-	-
Susquehanna	2	2	2	-	-	-	-
(Garman)	1	2	2	-	-	-	-
West Taylor	3	23	23	-	-	-	-
White	1	6	6	-	-	-	-
Rural delivery							
Carrolltown	1	4	4	-	-	-	-
Fallentimber	1	16	16	-	-	-	-
South Fork	3	16	16	-	-	-	-

TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF  
ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA,  
BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Cameron County, total	14	1,877	75	28	-	-	1,774
Borough							
Emporium	10	1,848	46	28	-	-	1,774
Townships							
Shippen	3	26	26	-	-	-	-
Grove	1	3	3	-	-	-	-
Carbon County, total	100	7,679	201	2,154	1,476	919	2,929
Boroughs							
Beaver Meadows	2	46	0	46	-	-	-
Bowmanstown	4	100	6	94	-	-	-
Jim Thorpe	10	477	28	319	130	-	-
Lansford	13	1,038	14	191	127	706	-
Lehighton	21	712	41	430	241	-	-
Palmerton	13	2,342	29	383	142	-	1,788
Parryville	1	13	13	-	-	-	-
Summit Hill	5	328	10	133	185	-	-
Weatherly	7	1,392	7	65	179	-	1,141
Weissport	4	373	-	73	300	-	-
Townships							
Banks	-	-	-	-	-	-	-
(Tresckow)	2	100	-	100	-	-	-
East Penn	2	49	4	45	-	-	-
Franklin	2	4	4	-	-	-	-
Lower Towamensing	1	4	4	-	-	-	-
(Aquashicola)	1	13	13	-	-	-	-
(Little Gap)	1	172	-	-	172	-	-
Mahoning	2	13	13	-	-	-	-
Mauch Chunk	-	-	-	-	-	-	-
(Nesquehoning)	7	488	0	275	-	213	-
Penn Forest	1	0	0	-	-	-	-
Rural delivery							
Lehighton	1	15	15	-	-	-	-
Centre County, total	82	4,306	320	963	649	637	1,737
Boroughs							
Bellefonte	8	179	31	23	125	-	-
Centre Hall	2	54	10	44	-	-	-
Howard	1	4	4	-	-	-	-
Milesburg	1	1	1	-	-	-	-
Millheim	5	142	7	135	-	-	-
Philipsburg	10	971	22	113	318	-	518
Port Matilda	1	54	-	54	-	-	-
Snow Shoe	1	102	-	-	102	-	-
State College	13	203	81	122	-	-	-
Townships							
Benner	1	202	-	-	-	202	-
Boggs	-	-	-	-	-	-	-
(Wingate)	1	5	5	-	-	-	-
Burnside	1	9	9	-	-	-	-
College	3	28	7	21	-	-	-
(Oak Hall Station)	2	76	6	70	-	-	-
Curtin	-	-	-	-	-	-	-
(Orviston)	1	87	-	87	-	-	-
Ferguson	2	94	5	89	-	-	-
Gregg	1	3	3	-	-	-	-
(Spring Mills)	2	74	2	72	-	-	-
Haines	2	13	13	-	-	-	-
Harris	1	3	3	-	-	-	-
(Boalsburg)	2	11	11	-	-	-	-
Howard	4	96	20	76	-	-	-
Huston	-	-	-	-	-	-	-
(Julian)	1	1	1	-	-	-	-
Penn	1	16	16	-	-	-	-
Snow Shoe	1	218	-	-	-	218	-
Spring	5	1,474	5	33	-	217	1,219
(Pleasant Gap)	3	122	18	-	104	-	-
Union	1	8	8	-	-	-	-
Walker	3	13	13	-	-	-	-
Rural delivery							
State College	2	43	19	24	-	-	-

TABLE 1: NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF  
ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA,  
BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Chester County, total	244	24,102	815	3,165	3,414	7,546	9,162
Tabulated city and boroughs							
Coatesville	16	5,314	38	371	140	-	4,765
Phoenixville	24	3,882	51	483	162	1,719	1,467
West Chester	22	2,166	51	316	242	1,039	518
Boroughs							
Atglen	1	10	10	-	-	-	-
Avondale	3	28	7	21	-	-	-
Downingtown	15	2,420	16	102	476	1,826	-
Elverson	2	17	17	-	-	-	-
Honey Brook	3	134	24	-	110	-	-
Kennett Square	16	868	44	274	252	298	-
Malvern	11	458	107	-	-	351	-
Modena	3	127	22	-	105	-	-
Oxford	7	316	10	22	284	-	-
Parkesburg	1	1	1	-	-	-	-
South Coatesville	2	95	10	85	-	-	-
Spring City	14	1,737	63	247	100	275	1,052
West Grove	1	1	1	-	-	-	-
Townships							
Caln	1	22	-	22	-	-	-
(Thorndale)	2	280	3	-	-	277	-
East Bradford	2	66	18	48	-	-	-
East Brandywine	1	0	0	-	-	-	-
East Caln	2	328	-	-	109	219	-
East Coventry	1	3	3	-	-	-	-
East Fallowfield	1	41	-	41	-	-	-
(Buck Run)	1	49	-	49	-	-	-
East Pikeland	-	-	-	-	-	-	-
(Kimberton)	5	253	15	-	238	-	-
East Whiteland	1	122	-	-	122	-	-
(Frazer)	2	127	1	-	126	-	-
Easttown	1	85	-	85	-	-	-
(Berwyn)	1	1	1	-	-	-	-
Honeybrook	1	1	1	-	-	-	-
Kennett	-	-	-	-	-	-	-
(Mendenhall)	1	17	17	-	-	-	-
London Grove	-	-	-	-	-	-	-
(Chatham)	1	10	10	-	-	-	-
Lower Oxford	1	6	6	-	-	-	-
(Lincoln University)	1	3	3	-	-	-	-
New Garden	2	48	-	48	-	-	-
(Londonderry)	1	6	6	-	-	-	-
(Toughkenamon)	1	208	-	-	-	208	-
North Coventry	6	48	25	23	-	-	-
(South Pottstown)	2	54	-	54	-	-	-
Penn	-	-	-	-	-	-	-
(Kelton)	1	120	-	-	120	-	-
Pennsbury	1	6	6	-	-	-	-
Pocopson	-	-	-	-	-	-	-
(Lenape)	1	80	-	80	-	-	-
Sadsbury	-	-	-	-	-	-	-
(Pomeroy)	2	20	20	-	-	-	-
(Sadsburyville)	2	130	1	-	129	-	-
Schuylkill	5	394	18	197	179	-	-
(Perkiomen Junction)	1	83	-	83	-	-	-
(Valley Forge)	1	30	-	30	-	-	-
Tredyffrin	2	17	17	-	-	-	-
(Devon)	2	245	2	-	-	243	-
(Paoli)	4	1,384	24	-	-	-	1,360
(Strafford)	2	27	6	21	-	-	-
Upper Uwchlan	1	52	-	52	-	-	-
Valley	2	408	-	70	-	338	-
Warwick	-	-	-	-	-	-	-
(Saint Peters)	1	28	-	28	-	-	-
West Bradford	2	24	24	-	-	-	-
West Caln	1	0	0	-	-	-	-
West Fallowfield	2	14	14	-	-	-	-
West Goshen	5	546	17	25	171	333	-
West Nantmeal	2	175	4	-	171	-	-
West Nottingham	1	6	6	-	-	-	-
(Nottingham)	1	15	15	-	-	-	-
West Sadsbury	1	5	5	-	-	-	-
West Vincent	-	-	-	-	-	-	-
(Birchrunville)	2	2	2	-	-	-	-
West Whiteland	2	3	3	-	-	-	-
(Exton)	6	757	0	159	178	420	-
(Whitford)	1	17	17	-	-	-	-
Willistown	1	2	2	-	-	-	-
Rural delivery							
Coatesville	1	47	-	47	-	-	-
Downingtown	1	29	-	29	-	-	-
Phoenixville	3	10	10	-	-	-	-
Spring City	3	68	15	53	-	-	-
West Chester	2	6	6	-	-	-	-



TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Clarion County, total	63	2, 205	243	476	328	346	812
Boroughs							
Callensburg	1	2	2	-	-	-	-
Clarion	10	883	71	-	-	-	812
East Brady	1	121	-	-	121	-	-
Foxburg	1	4	4	-	-	-	-
Hawthorne	1	21	-	21	-	-	-
Knox	4	357	11	-	-	346	-
New Bethlehem	8	93	32	61	-	-	-
Rimersburg	3	12	12	-	-	-	-
Sligo	3	6	6	-	-	-	-
Strattonville	2	14	14	-	-	-	-
Townships							
Beaver	1	1	1	-	-	-	-
Elk	3	52	17	35	-	-	-
Highland	1	1	1	-	-	-	-
Knox	1	71	-	71	-	-	-
(Snydersburg)	1	12	12	-	-	-	-
Licking	2	4	4	-	-	-	-
Limestone	2	5	5	-	-	-	-
Madison	4	52	7	45	-	-	-
Millcreek	-	-	-	-	-	-	-
(Fisher)	1	7	7	-	-	-	-
Paint	2	107	6	-	101	-	-
Porter	4	104	7	97	-	-	-
(St. Charles)	1	88	-	88	-	-	-
Redbank	1	106	-	-	106	-	-
Toby	1	4	4	-	-	-	-
Washington	1	3	3	-	-	-	-
(Fryburg)	1	3	3	-	-	-	-
(Marble)	1	58	-	58	-	-	-
Rural delivery							
Clarion	1	14	14	-	-	-	-
Clearfield County, total	117	5, 667	394	1, 233	2, 067	1, 469	504
Tabulated city and borough							
Clearfield	15	864	39	146	460	219	-
DuBois	18	1, 202	62	324	312	-	504
Boroughs							
Burnside	1	5	5	-	-	-	-
Chester Hill	1	59	-	59	-	-	-
Coalport	1	118	-	-	118	-	-
Curwensville	9	580	34	25	521	-	-
Houtzdale	3	422	4	-	-	418	-
Irvona	2	105	3	-	102	-	-
Lumber City	1	32	-	32	-	-	-
Mahaffey	4	17	17	-	-	-	-
Osceola	4	99	15	84	-	-	-
Ramey	1	5	5	-	-	-	-
Westover	1	111	-	-	111	-	-
Townships							
Beccaria	2	10	10	-	-	-	-
(Beccaria)	1	4	4	-	-	-	-
Bell	7	38	38	-	-	-	-
Bigler	1	21	-	21	-	-	-
(Madera)	2	79	4	75	-	-	-
Boggs	-	-	-	-	-	-	-
(West Decatur)	1	82	-	82	-	-	-
Bradford	3	64	10	54	-	-	-
(Bigler)	2	80	5	75	-	-	-
Brady	1	4	4	-	-	-	-
(Helvetia)	1	3	3	-	-	-	-
Burnside	1	1	1	-	-	-	-
Chest	-	-	-	-	-	-	-
(LaJose)	1	3	3	-	-	-	-
Decatur	4	73	13	60	-	-	-
Girard	-	-	-	-	-	-	-
(Surveyor)	1	2	2	-	-	-	-
Goshen	1	4	4	-	-	-	-
Graham	1	2	2	-	-	-	-
Jordan	-	-	-	-	-	-	-
(Berwindale)	1	5	5	-	-	-	-
Knox	2	14	14	-	-	-	-
Lawrence	10	923	19	171	177	556	-
Penn	2	15	15	-	-	-	-
Pike	2	175	10	-	165	-	-
Sandy	7	168	42	25	101	-	-
Union	-	-	-	-	-	-	-
(Rockton)	1	2	2	-	-	-	-
Unknown place name							
Quehanna	1	276	-	-	-	276	-

TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF  
ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA,  
BY COUNTY: 1958 (continued)

16

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Clinton County, total	62	5,890	217	454	433	1,435	3,351
Tabulated borough							
Lock Haven	25	2,999	58	287	243	602	1,809
Boroughs							
Avis	1	7	7	-	-	-	-
Loganton	1	9	9	-	-	-	-
Mill Hall	5	815	26	43	190	-	556
Renovo	2	17	17	-	-	-	-
Townships							
Bald Eagle	4	68	20	48	-	-	-
Castanea	3	1,393	-	49	-	358	986
(Castanea)	2	30	3	27	-	-	-
Chapman	-	-	-	-	-	-	-
(North Bend)	1	2	2	-	-	-	-
Crawford	1	10	10	-	-	-	-
Gallagher	1	13	13	-	-	-	-
Green	1	0	0	-	-	-	-
Lamar	2	5	5	-	-	-	-
(Mackeyville)	3	16	16	-	-	-	-
(Salona)	1	7	7	-	-	-	-
Leidy	1	4	4	-	-	-	-
Noyes	-	-	-	-	-	-	-
(Westport)	1	1	1	-	-	-	-
Pine Creek	2	214	1	-	-	213	-
(Woolrich)	1	262	-	-	-	262	-
Porter	1	3	3	-	-	-	-
Woodward	1	1	1	-	-	-	-
Rural delivery							
Lock Haven	1	2	2	-	-	-	-
Mill Hall	1	12	12	-	-	-	-
Columbia County, total	110	9,223	394	1,740	574	1,761	4,754
Tabulated borough and town							
Berwick	39	4,070	154	735	298	389	2,494
Bloomsburg	19	2,928	55	405	-	818	1,650
Boroughs							
Benton	5	300	24	21	-	255	-
Catawissa	9	737	57	70	-	-	610
Centralia	1	59	-	59	-	-	-
Millville	6	296	6	134	156	-	-
Orangeville	2	25	0	25	-	-	-
Townships							
Benton	1	33	-	33	-	-	-
Briar Creek	1	4	4	-	-	-	-
Catawissa	1	9	9	-	-	-	-
Cleveland	1	1	1	-	-	-	-
Conyngham	-	-	-	-	-	-	-
(Locustdale)	2	112	-	112	-	-	-
(Wilburton)	1	87	-	87	-	-	-
Fishing Creek	-	-	-	-	-	-	-
(Jonestown)	1	3	3	-	-	-	-
Mifflin	2	148	-	28	120	-	-
(Mifflinville)	1	1	1	-	-	-	-
Montour	1	1	1	-	-	-	-
Orange	2	8	8	-	-	-	-
Pine	1	6	6	-	-	-	-
Roaring Creek	1	7	7	-	-	-	-
Scott	1	7	7	-	-	-	-
(Almedia)	1	299	-	-	-	299	-
(Espy)	1	10	10	-	-	-	-
South Center	1	0	0	-	-	-	-
Rural delivery							
Bloomsburg	7	58	27	31	-	-	-
Catawissa	1	1	1	-	-	-	-
Millville	1	13	13	-	-	-	-

TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Crawford County, total	123	7,817	549	1,109	518	1,530	4,111
Tabulated cities							
Meadville	23	2,621	104	304	253	-	1,960
Titusville	13	1,866	29	174	-	822	841
Boroughs							
Cambridge Springs	8	207	25	182	-	-	-
Centerville	1	13	13	-	-	-	-
Cochranston	4	141	4	32	105	-	-
Conneaut Lake	2	2	2	-	-	-	-
Conneautville	4	186	1	25	160	-	-
Hydetown	1	1	1	-	-	-	-
Linesville	6	123	47	76	-	-	-
Saegertown	4	76	25	51	-	-	-
Spartansburg	3	19	19	-	-	-	-
Springboro	2	241	-	24	-	217	-
Townville	1	1	1	-	-	-	-
Venango	1	1	1	-	-	-	-
Townships							
Athens	1	3	3	-	-	-	-
Beaver	2	8	8	-	-	-	-
Cambridge	2	7	7	-	-	-	-
Conneaut	1	6	6	-	-	-	-
Cussewago	1	3	3	-	-	-	-
East Fairfield	1	13	13	-	-	-	-
East Fallowfield	1	2	2	-	-	-	-
(Atlantic)	1	4	4	-	-	-	-
Oil Creek	7	103	57	46	-	-	-
(East Titusville)	1	49	-	49	-	-	-
Randolph	4	12	12	-	-	-	-
South Shenango	-	-	-	-	-	-	-
(Westford)	1	14	14	-	-	-	-
Sparta	1	10	10	-	-	-	-
Spring	1	3	3	-	-	-	-
Steuben	1	0	0	-	-	-	-
Summit	1	14	14	-	-	-	-
Vernon	8	1,569	29	-	-	230	1,310
Wayne	1	1	1	-	-	-	-
West Mead	1	70	-	70	-	-	-
Woodcock	1	261	-	-	-	261	-
Rural delivery							
Centerville	1	12	12	-	-	-	-
Conneautville	2	12	12	-	-	-	-
Linesville	1	3	3	-	-	-	-
Meadville	6	60	60	-	-	-	-
Townville	1	76	-	76	-	-	-
Unknown	1	4	4	-	-	-	-
Cumberland County, total	138	9,510	483	2,101	2,117	1,704	3,105
Tabulated borough							
Carlisle	37	3,924	133	402	642	796	1,951
Boroughs							
Camp Hill (1)	3	102	28	74	-	-	-
Lemoyne (1)	15	674	50	221	165	238	-
Mechanicsburg	13	427	54	238	135	-	-
Mount Holly Springs	9	715	16	240	245	214	-
New Cumberland (1)	12	259	47	212	-	-	-
Newville	5	361	14	97	-	250	-
Shippensburg	15	920	45	120	549	206	-
Shiremanstown (1)	3	280	6	89	185	-	-
Townships							
Dickinson	2	79	2	77	-	-	-
(Tolland)	1	3	3	-	-	-	-
East Pennsboro (1)	-	-	-	-	-	-	-
(Enola)	1	5	5	-	-	-	-
(Summerdale)	1	15	15	-	-	-	-
Hampden	3	1,218	12	52	-	-	1,154
Lower Allen (1)	3	267	4	67	196	-	-
North Middleton	3	12	12	-	-	-	-
Silver Spring	-	-	-	-	-	-	-
(New Kingston)	2	36	13	23	-	-	-
Southampton	1	42	-	42	-	-	-
South Middleton	-	-	-	-	-	-	-
(Boiling Springs)	1	4	4	-	-	-	-
South Newton	-	-	-	-	-	-	-
(Walnut Bottom)	1	4	4	-	-	-	-
Upper Allen	3	46	9	37	-	-	-
(Grantham)	1	55	-	55	-	-	-
Rural delivery							
Mechanicsburg	2	60	5	55	-	-	-
Newville	1	2	2	-	-	-	-

(1) Urban fringe

TABLE 1: NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

18

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Dauphin County, total	243	24,500	756	3,611	2,561	4,091	13,481
Tabulated city and borough							
Harrisburg	122	9,810	418	1,740	950	2,121	4,581
Steelton (1)	6	5,031	6	52	139	-	4,834
Boroughs							
Dauphin	1	63	-	63	-	-	-
Elizabethville	7	264	24	82	158	-	-
Gratz	2	162	1	-	161	-	-
Halifax	1	154	-	-	154	-	-
Highspire (1)	4	71	23	48	-	-	-
Hummelstown	5	247	9	90	148	-	-
Lykens	9	545	24	204	101	216	-
Middletown (1)	14	841	35	230	263	313	-
Millersburg	17	1,984	69	153	319	778	665
Penbrook (1)	4	61	25	36	-	-	-
Royalton (1)	1	25	-	25	-	-	-
Williamstown	4	168	5	163	-	-	-
Townships							
Conewago	1	7	7	-	-	-	-
Derry	-	-	-	-	-	-	-
(Hershey)	8	3,938	14	82	168	273	3,401
Halifax	1	2	2	-	-	-	-
Londonderry	1	6	6	-	-	-	-
Lower Paxton (1)	6	148	15	133	-	-	-
Middle Paxton	1	26	-	26	-	-	-
Mifflin	1	2	2	-	-	-	-
(Pillow)	3	76	8	68	-	-	-
South Hanover	1	3	3	-	-	-	-
Susquehanna (1)	6	148	22	126	-	-	-
Swatara (1)	7	617	3	224	-	390	-
(Bressler)	1	1	1	-	-	-	-
(Oberlin)	2	6	6	-	-	-	-
Upper Paxton	1	5	5	-	-	-	-
Washington	3	11	11	-	-	-	-
Wiconisco	-	-	-	-	-	-	-
(Wiconisco)	3	78	12	66	-	-	-

(1) Urban fringe

Delaware County, total	330	46,365	1,157	3,032	4,027	6,774	31,375
Tabulated city							
Chester (1)	75	11,628	250	911	1,230	1,439	7,798
Boroughs							
Brookhaven	3	45	17	28	-	-	-
Chester Heights	2	18	18	-	-	-	-
Clifton Heights (1)	19	2,336	49	180	324	1,186	597
Collingdale (1)	11	255	27	121	107	-	-
Colwyn (1)	4	101	8	93	-	-	-
Darby (1)	10	459	44	86	104	225	-
East Lansdowne (1)	3	14	14	-	-	-	-
Eddystone (1)	7	3,844	13	64	-	751	3,016
Folcroft	3	272	1	20	-	251	-
Glenolden (1)	2	28	28	-	-	-	-
Lansdowne (1)	16	834	38	210	315	271	-
Marcus Hook	5	6,768	-	72	-	320	6,376
Media (1)	11	76	34	42	-	-	-
Morton (1)	5	2,643	14	-	172	-	2,457
Prospect Park (1)	7	289	43	-	-	246	-
Ridley Park	1	51	-	51	-	-	-
Sharon Hill (1)	6	1,673	6	97	-	260	1,310
Swarthmore (1)	4	43	8	35	-	-	-
Trainer	3	1,569	-	154	-	-	1,415
Upland (1)	5	503	-	87	-	416	-
Yeadon	2	10	10	-	-	-	-
Townships							
Aston	2	31	10	21	-	-	-
Bethel	1	1	1	-	-	-	-
Chester (1)	1	0	0	-	-	-	-
(Crum Lynne)	4	115	9	106	-	-	-
Concord	1	0	0	-	-	-	-
(Concordville)	2	207	3	-	-	204	-
Darby (1)	2	6	6	-	-	-	-
Edgemont	2	22	22	-	-	-	-



TABLE 1.: NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF  
ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA,  
BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Delaware County							
Townships (continued)							
Haverford (1)	4	37	5	32	-	-	-
(Haverford)	1	6	6	-	-	-	-
(Havertown)	10	205	36	-	169	-	-
Lower Chichester	-	-	-	-	-	-	-
(Linwood)	1	9	9	-	-	-	-
Marple	-	-	-	-	-	-	-
(Broomall)	3	15	15	-	-	-	-
Middletown	2	96	3	93	-	-	-
(Darling)	1	16	16	-	-	-	-
(Glen Riddle)	4	176	12	41	123	-	-
(Lenni Mills)	7	755	17	43	162	533	-
(Wa Wa)	1	170	-	-	170	-	-
Nether Providence (1)	1	2	2	-	-	-	-
(Wallingford)	2	207	-	55	152	-	-
Newtown	-	-	-	-	-	-	-
(Newtown Square)	3	36	16	20	-	-	-
Radnor (1)	2	248	10	-	-	238	-
(Radnor)	1	35	-	35	-	-	-
(Villanova)	1	8	8	-	-	-	-
(Wayne)	9	300	60	65	175	-	-
Ridley	-	-	-	-	-	-	-
(Folsom)	3	21	21	-	-	-	-
(Holmes)	2	145	12	-	133	-	-
(Milmont Park)	1	4	4	-	-	-	-
(Woodlyn) (1)	2	20	20	-	-	-	-
Springfield (1)	1	2	2	-	-	-	-
Tinicum	-	-	-	-	-	-	-
(Essington)	4	335	4	26	305	-	-
(Lester) (1)	3	8,718	-	-	112	200	8,406
Upper Chichester	1	19	19	-	-	-	-
(Boothwyn)	2	48	3	45	-	-	-
(Twin Oaks)	2	10	10	-	-	-	-
Upper Darby (1)	9	83	38	45	-	-	-
(Drexel Hill)	2	7	7	-	-	-	-
(Fernwood)	10	240	65	65	110	-	-
(Primos)	8	477	28	51	164	234	-
(Secayne)	1	0	0	-	-	-	-
(Upper Darby)	7	74	36	38	-	-	-
(1) Urban fringe							
Elk County, total	64	7,174	190	518	917	620	4,929
Boroughs							
Johnsonburg	5	1,090	22	-	-	-	1,068
Ridgway	14	1,425	63	160	405	-	797
St. Marys	26	4,162	67	279	132	620	3,064
Townships							
Benzinger	5	151	11	-	140	-	-
Fox	1	3	3	-	-	-	-
Highland	-	-	-	-	-	-	-
(DeYoung)	1	6	6	-	-	-	-
Horton	1	3	3	-	-	-	-
Jay	2	0	0	-	-	-	-
(Weedville)	1	1	1	-	-	-	-
Jones	2	82	3	79	-	-	-
(Wilcox)	1	140	-	-	140	-	-
Ridgway	3	4	4	-	-	-	-
(Daguscachonda)	2	107	7	-	100	-	-

Figure 2  
**MANUFACTURING EMPLOYMENT FOR MUNICIPALITIES IN  
 NORTHWEST PENNSYLVANIA**

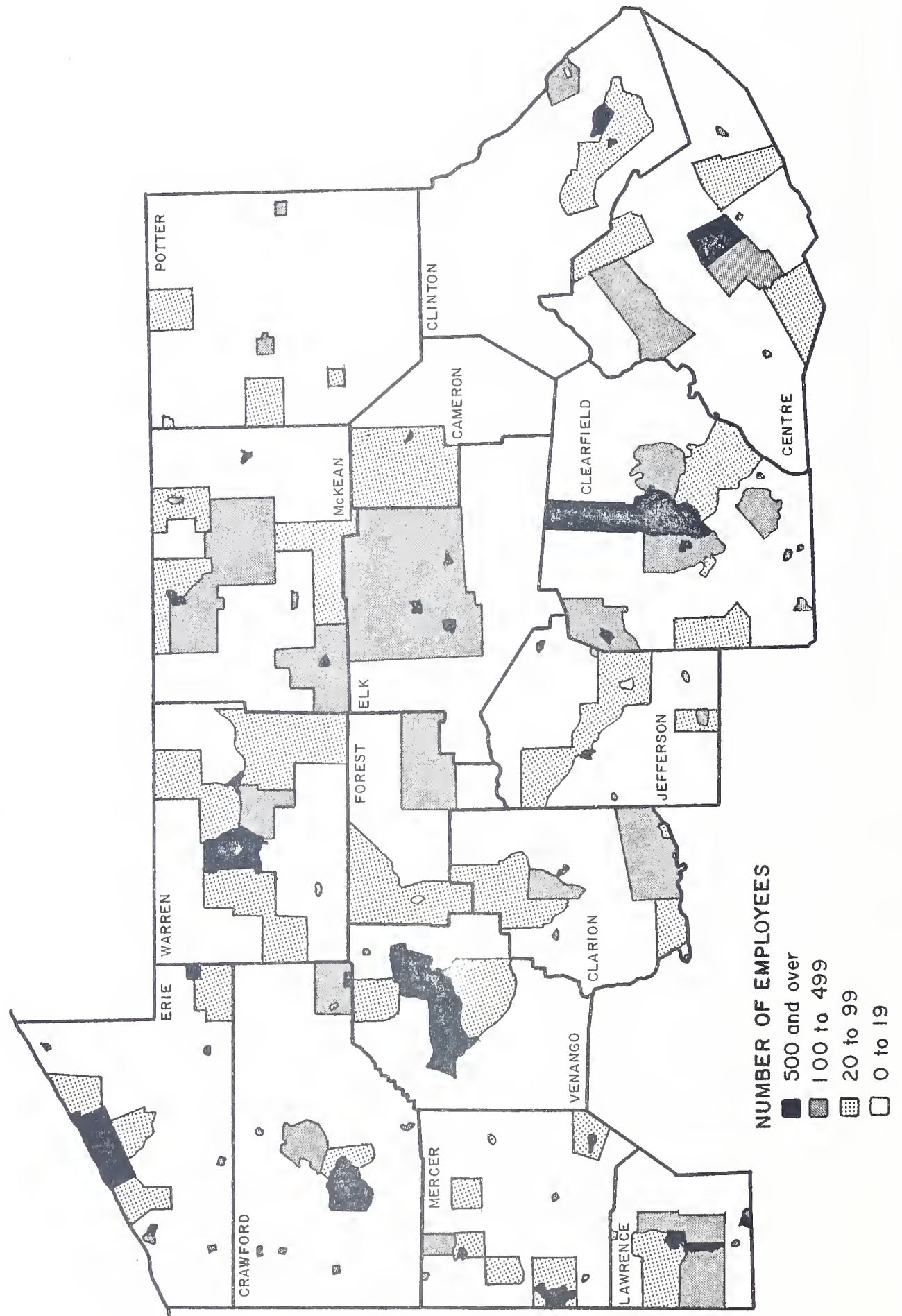


TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Erie County, total	430	35,046	1,514	5,254	5,004	6,839	16,435
Tabulated cities							
Corry	15	1,677	42	96	137	422	980
Erie	301	25,583	1,074	3,523	3,584	5,428	11,974
Boroughs							
Albion	4	130	10	120	-	-	-
Cranesville	2	9	9	-	-	-	-
Edinboro	1	100	-	-	100	-	-
Fairview	2	22	22	-	-	-	-
Girard	9	1,057	13	231	136	-	677
Lake City	11	423	29	263	131	-	-
North East	15	989	27	334	116	512	-
Platea	1	2	2	-	-	-	-
Union City	13	722	32	173	517	-	-
Waterford	1	4	4	-	-	-	-
Wattsburg	1	15	15	-	-	-	-
Wesleyville (1)	1	7	7	-	-	-	-
Townships							
Concord	1	80	-	80	-	-	-
Conneaut	1	2	2	-	-	-	-
Fairview	3	36	11	25	-	-	-
Greene	2	4	4	-	-	-	-
Greenfield	1	14	14	-	-	-	-
Harborcreek	2	27	2	25	-	-	-
Lawrence Park (1)	5	2,472	13	-	109	270	2,080
Le Boeuf	1	2	2	-	-	-	-
McKean	1	0	0	-	-	-	-
Millcreek (1)	18	1,572	83	384	174	207	724
North East	2	6	6	-	-	-	-
Springfield	2	2	2	-	-	-	-
(North Springfield)	1	12	12	-	-	-	-
Summit	3	22	22	-	-	-	-
Venango	1	4	4	-	-	-	-
Washington	1	4	4	-	-	-	-
Waterford	4	13	13	-	-	-	-
Wayne	1	5	5	-	-	-	-
Rural delivery							
Corry	1	11	11	-	-	-	-
Erie	2	18	18	-	-	-	-
(1) Urban fringe							
Fayette County, total	164	7,404	689	2,126	773	1,369	2,447
Tabulated cities							
Connellsville	25	688	101	279	-	308	-
Uniontown	34	1,045	179	373	118	375	-
Boroughs							
Belle Vernon	6	214	29	185	-	-	-
Brownsville	4	59	25	34	-	-	-
Dunbar	1	7	7	-	-	-	-
Everson	3	171	4	167	-	-	-
Fairchance	2	25	25	-	-	-	-
Fayette City	1	1	1	-	-	-	-
Markleysburg	1	22	-	22	-	-	-
Masontown	3	133	7	126	-	-	-
Newell	1	115	-	-	115	-	-
Perryopolis	2	165	-	55	110	-	-
Point Marion	3	406	3	-	-	403	-
South Connellsville	4	2,528	10	71	-	-	2,447
Townships							
Bullskin	3	3	3	-	-	-	-
Connellsville	1	0	0	-	-	-	-
Dunbar	3	166	5	29	132	-	-
(Adelaide)	1	15	15	-	-	-	-
Georges	1	17	17	-	-	-	-
German	2	53	10	43	-	-	-
Henry Clay	7	85	37	48	-	-	-
Luzerne	2	159	4	-	155	-	-
Menallen	3	44	21	23	-	-	-
Nicholson	-	-	-	-	-	-	-
(Grays Landing)	1	10	10	-	-	-	-
North Union	9	584	13	288	-	283	-
(Mount Braddock)	3	260	-	117	143	-	-
Perry	-	-	-	-	-	-	-
(Layton)	2	91	-	91	-	-	-
(Star Junction)	1	8	8	-	-	-	-
Redstone	-	-	-	-	-	-	-
(Cardale)	1	7	7	-	-	-	-
(Fairbank)	1	34	-	34	-	-	-
Saltlick	-	-	-	-	-	-	-
(Melcroft)	1	3	3	-	-	-	-
South Union	3	30	30	-	-	-	-
(Hopwood)	1	3	3	-	-	-	-
Springfield	3	9	9	-	-	-	-
(Mill Run)	2	7	7	-	-	-	-
(Normalville)	4	33	13	20	-	-	-
Stewart	3	11	11	-	-	-	-
Upper Tyrone	1	94	-	94	-	-	-
Washington	2	25	25	-	-	-	-
Wharton	2	4	4	-	-	-	-
(Farmington)	4	12	12	-	-	-	-
(Gibbon Glade)	1	27	-	27	-	-	-
Rural delivery							
Brownsville	1	4	4	-	-	-	-
Connellsville	2	12	12	-	-	-	-
Uniontown	3	15	15	-	-	-	-

TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF  
ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA,  
BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Forest County, total	11	655	30	266	-	359	-
Borough Tionesta	3	119	7	112	-	-	-
Townships							
Harmony	1	3	3	-	-	-	-
(West Hickory)	1	63	-	63	-	-	-
Hickory	-	-	-	-	-	-	-
(Endeavor)	1	68	-	68	-	-	-
Jenks	1	1	1	-	-	-	-
(Marienville)	2	375	16	-	-	359	-
Kingsley	-	-	-	-	-	-	-
(Kellettville)	1	3	3	-	-	-	-
Tionesta	1	23	-	23	-	-	-
Franklin County, total	129	9,396	421	1,584	662	2,616	4,113
Tabulated boroughs							
Chambersburg	43	3,778	147	592	263	1,167	1,609
Waynesboro	25	3,501	69	229	110	589	2,504
Boroughs							
Greencastle	9	245	32	213	-	-	-
Mercersburg	7	307	23	101	183	-	-
Mont Alto	1	106	-	-	106	-	-
Townships							
Antrim	5	98	5	93	-	-	-
(Shady Grove)	1	86	-	86	-	-	-
Fannett	-	-	-	-	-	-	-
(Anderson)	1	0	0	-	-	-	-
(Concord)	1	3	3	-	-	-	-
Greene	1	3	3	-	-	-	-
(Scotland)	1	79	-	79	-	-	-
Guilford	1	8	8	-	-	-	-
(Fayetteville)	1	13	13	-	-	-	-
(Marion)	1	9	9	-	-	-	-
Hamilton	1	11	11	-	-	-	-
Letterkenny	3	9	9	-	-	-	-
Lurgan	-	-	-	-	-	-	-
(Roxbury)	1	90	-	90	-	-	-
Montgomery	2	9	9	-	-	-	-
Quincy	1	3	3	-	-	-	-
(Quincy)	1	11	11	-	-	-	-
St. Thomas	1	0	0	-	-	-	-
Southampton	3	13	13	-	-	-	-
(Shippensburg)	5	914	6	48	-	860	-
Warren	1	3	3	-	-	-	-
Washington	6	30	30	-	-	-	-
Rural delivery Chambersburg	6	67	14	53	-	-	-
Fulton County, total	19	99	49	50	-	-	-
Borough McConnellsburg	5	11	11	-	-	-	-
Townships							
Ayr	2	9	9	-	-	-	-
(Big Cove Tannery)	2	3	3	-	-	-	-
Belfast	1	2	2	-	-	-	-
(Needmore)	1	5	5	-	-	-	-
Dublin	1	1	1	-	-	-	-
(Burnt Cabins)	1	2	2	-	-	-	-
(Hustontown)	1	3	3	-	-	-	-
Licking Creek	1	5	5	-	-	-	-
Thompson	1	2	2	-	-	-	-
Union	-	-	-	-	-	-	-
(Amaranth)	2	51	1	50	-	-	-
Wells	1	5	5	-	-	-	-



TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Greene County, total	29	561	103	166	292	-	-
Boroughs							
Carmichaels	2	10	10	-	-	-	-
Jefferson	2	5	5	-	-	-	-
Rice's Landing	1	0	0	-	-	-	-
Waynesburg	13	331	50	166	115	-	-
Townships							
Franklin	4	189	12	-	177	-	-
Freeport	-	-	-	-	-	-	-
(Garrison)	1	1	1	-	-	-	-
Gray	-	-	-	-	-	-	-
(Graysville)	1	1	1	-	-	-	-
Monongahela	2	14	14	-	-	-	-
Morris	1	4	4	-	-	-	-
Perry	1	4	4	-	-	-	-
Wayne	1	2	2	-	-	-	-
Huntingdon County, total	50	2,888	142	560	140	536	1,510
Tabulated borough							
Huntingdon	14	1,423	27	314	-	300	782
Boroughs							
Alexandria	1	22	-	22	-	-	-
Cassville	1	0	0	-	-	-	-
Mapleton	1	6	6	-	-	-	-
Mill Creek	1	13	13	-	-	-	-
Mount Union	8	1,243	4	135	140	236	728
Ortisonia	1	5	5	-	-	-	-
Rockhill	1	36	-	36	-	-	-
Saltillo	2	10	10	-	-	-	-
Three Springs	2	8	8	-	-	-	-
Townships							
Cass	1	5	5	-	-	-	-
Clay	1	5	5	-	-	-	-
Cromwell	1	5	5	-	-	-	-
Dublin	3	9	9	-	-	-	-
Logan	1	3	3	-	-	-	-
Oneida	2	9	9	-	-	-	-
Penn	1	0	0	-	-	-	-
(James Creek)	1	23	-	23	-	-	-
Porter	1	3	3	-	-	-	-
Shirley	1	3	3	-	-	-	-
Spruce Creek	1	10	10	-	-	-	-
Tell	1	6	6	-	-	-	-
Union	1	9	9	-	-	-	-
Warrior's Mark	1	30	-	30	-	-	-
Rural delivery							
Huntingdon	1	2	2	-	-	-	-
Indiana County, total	74	3,506	271	831	496	1,406	502
Boroughs							
Blairsville	9	301	56	128	117	-	-
Cherrytree	1	70	-	70	-	-	-
Clymer	1	124	-	-	124	-	-
Homer City	3	530	8	20	-	-	502
Indiana	22	1,027	103	209	100	615	-
Marion Center	2	5	5	-	-	-	-
Saltsburg	5	377	5	112	-	260	-
Townships							
Armstrong	1	2	2	-	-	-	-
Banks	1	1	1	-	-	-	-
Brushvalley	1	8	8	-	-	-	-
Buffington	1	6	6	-	-	-	-
Burrell	2	3	3	-	-	-	-
Canoe	-	-	-	-	-	-	-
(Juneau)	1	3	3	-	-	-	-
(Rossiter)	1	321	-	-	-	321	-
Center	1	16	16	-	-	-	-
(Graceton)	1	17	17	-	-	-	-
(Lucerne Mines)	1	37	-	37	-	-	-
Conemaugh	1	155	-	-	155	-	-
East Mahoning	1	4	4	-	-	-	-
East Wheatfield	2	10	10	-	-	-	-
Montgomery	1	0	0	-	-	-	-
(Gipsy)	1	0	0	-	-	-	-
North Mahoning	2	26	1	25	-	-	-
Pine	3	8	8	-	-	-	-
Rayne	-	-	-	-	-	-	-
(Ernest)	1	37	-	37	-	-	-
Washington	1	1	1	-	-	-	-
West Wheatfield	1	72	-	72	-	-	-
White	6	345	14	121	-	210	-

Figure 3

# MANUFACTURING EMPLOYMENT FOR MUNICIPALITIES IN NORTHEAST PENNSYLVANIA

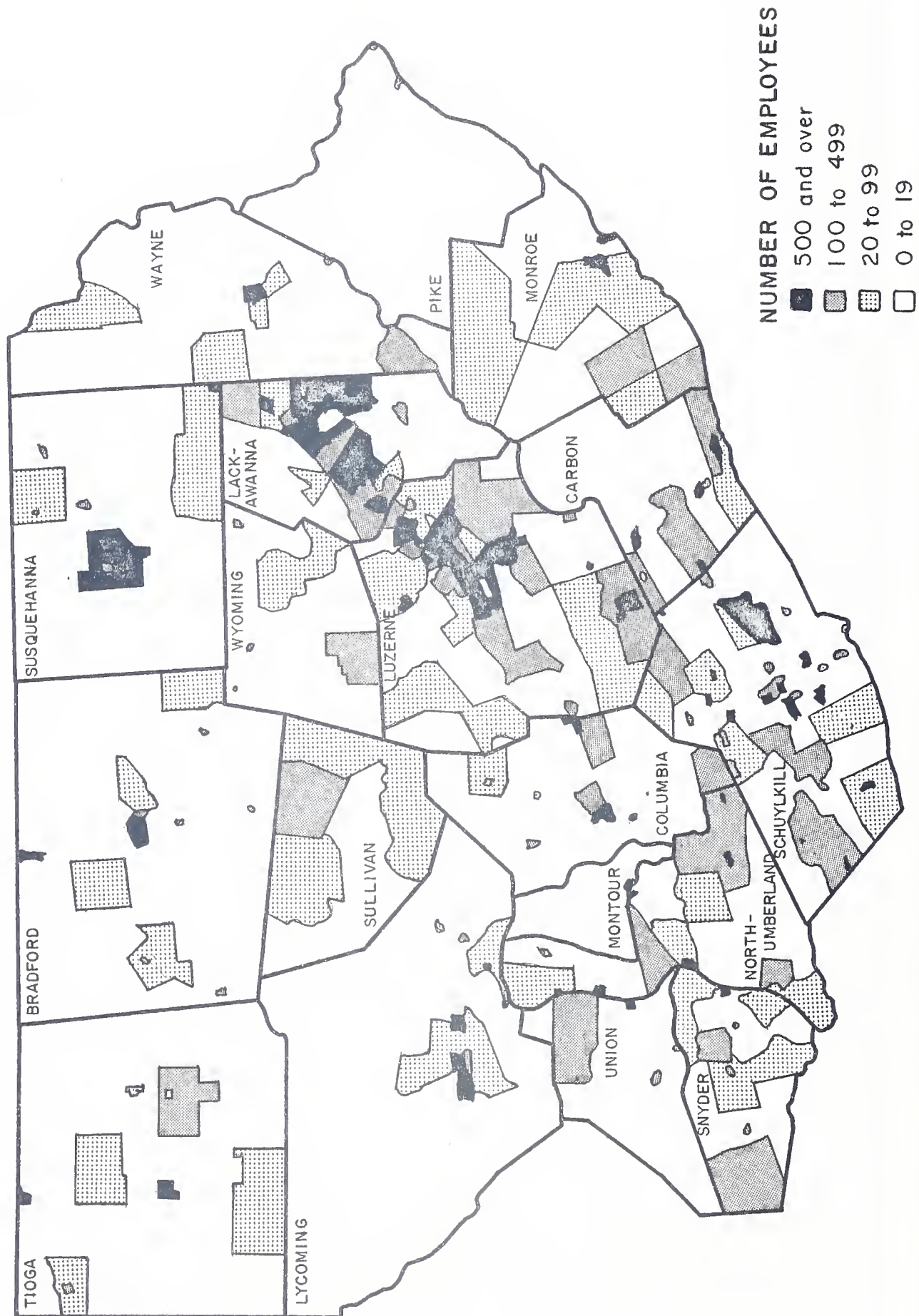


TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Jefferson County, total	76	4,647	355	672	289	1,069	2,262
Tabulated borough Punxsatawney	19	338	106	130	102	-	-
Boroughs							
Big Run	2	61	2	59	-	-	-
Brockway	4	1,677	7	24	187	-	1,459
Brookville	10	1,024	62	159	-	-	803
Falls Creek	2	454	-	58	-	396	-
Reynoldsville	8	497	24	46	-	427	-
Summerville	1	246	-	-	-	246	-
Sykesville	4	85	37	48	-	-	-
Townships							
Beaver	2	15	15	-	-	-	-
Bell	1	2	2	-	-	-	-
(Anita)	1	2	2	-	-	-	-
Clover	1	2	2	-	-	-	-
Eldred	2	19	19	-	-	-	-
(Sigel)	1	10	10	-	-	-	-
Knox	-	-	-	-	-	-	-
(Knoxdale)	1	8	8	-	-	-	-
Perry	-	-	-	-	-	-	-
(Frostburg)	1	3	3	-	-	-	-
Pinecreek	1	39	-	39	-	-	-
Polk	1	1	1	-	-	-	-
Ringgold	1	4	4	-	-	-	-
(Dora)	1	1	1	-	-	-	-
Rose	1	1	1	-	-	-	-
Union	1	3	3	-	-	-	-
Warsaw	2	9	9	-	-	-	-
Winslow	4	64	15	49	-	-	-
Young	-	-	-	-	-	-	-
(Elk Run)	1	60	-	60	-	-	-
Rural delivery							
Brookville	2	20	20	-	-	-	-
Punxsatawney	1	2	2	-	-	-	-
Juniata County, total	38	1,080	109	645	326	-	-
Boroughs							
Mifflin	1	36	-	36	-	-	-
Mifflintown	4	180	5	175	-	-	-
Port Royal	3	88	5	83	-	-	-
Thompsontown	4	225	8	51	166	-	-
Townships							
Beale	-	-	-	-	-	-	-
(Academia)	1	3	3	-	-	-	-
Fayette	4	10	10	-	-	-	-
(Cocolamus)	1	2	2	-	-	-	-
(McAlisterville)	5	215	15	40	160	-	-
Fermanagh	4	21	21	-	-	-	-
Greenwood	1	6	6	-	-	-	-
Monroe	1	2	2	-	-	-	-
(Richfield)	3	112	15	97	-	-	-
Turbett	1	2	2	-	-	-	-
Tuscarora	4	85	15	70	-	-	-
Walker	1	93	-	93	-	-	-
Lackawanna County, total	459	28,289	1,251	8,494	4,896	10,448	3,200
Tabulated cities and borough							
Carbondale (1)	31	1,556	63	713	531	249	-
Dunmore (1)	18	1,488	19	576	262	631	-
Scranton	257	17,696	814	3,518	3,022	7,774	2,568
Boroughs							
Archbald (1)	7	502	11	163	101	227	-
(Jessup) (1)	6	749	1	98	269	381	-
Blakely (Peckville) (1)	15	790	44	446	-	300	-
Clarks Summit (1)	7	65	29	36	-	-	-
Dalton	1	1	1	-	-	-	-
Dickson City (1)	13	363	28	335	-	-	-
Jermyn (1)	7	314	16	198	100	-	-
Mayfield (1)	7	409	14	163	232	-	-
Moosic (1)	9	209	17	192	-	-	-
Moscow	6	201	20	181	-	-	-
Old Forge (1)	19	1,252	40	580	-	-	632
Olyphant (1)	12	818	38	409	140	231	-
Taylor (1)	6	330	14	182	134	-	-
Throop (1)	5	183	5	178	-	-	-
Vandling	1	40	-	40	-	-	-
Townships							
Abington	1	7	7	-	-	-	-
Carbondale	1	0	0	-	-	-	-
(Childs)	3	83	18	65	-	-	-
Fell	-	-	-	-	-	-	-
(Simpson)	4	193	-	88	105	-	-
Greenfield	1	4	4	-	-	-	-
Jefferson	2	23	2	21	-	-	-
(Eynon)	5	580	4	182	-	394	-
Lackawanna (1)	1	34	-	34	-	-	-
La Plume	1	4	4	-	-	-	-
Madison	3	8	8	-	-	-	-
North Abington	2	2	2	-	-	-	-
Ransom	1	35	-	35	-	-	-
(Ransom)	1	261	-	-	-	261	-
Scott	3	11	11	-	-	-	-
South Abington	1	16	16	-	-	-	-
(Chinchilla)	1	61	-	61	-	-	-
Spring Brook	1	1	1	-	-	-	-

(1) Urban fringe

TABLE 1: NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF  
ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA,  
BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Lancaster County, total	589	44,255	2,303	8,783	5,687	11,012	16,470
Tabulated city and boroughs							
Columbia	34	1,859	93	565	534	667	-
Elizabethtown	26	1,860	97	374	643	746	-
Ephrata	29	2,803	132	387	752	888	644
Lancaster	169	18,898	810	2,231	1,766	3,474	10,617
Lititz	33	1,931	118	639	159	1,015	-
Boroughs							
Adamstown	5	777	5	91	230	451	-
Akron	4	648	14	56	138	440	-
Christiana	3	147	0	147	-	-	-
Denver	13	906	33	249	190	434	-
East Petersburg	2	107	1	-	106	-	-
Manheim	17	1,024	30	472	173	349	-
Marietta	10	766	35	200	-	531	-
Millersville (1)	1	20	-	20	-	-	-
Mount Joy	12	713	40	338	-	335	-
Mountville	3	71	1	70	-	-	-
New Holland	10	2,194	20	250	-	623	1,301
Quarryville	5	50	50	-	-	-	-
Terre Hill	4	93	9	84	-	-	-
Townships							
Bart	1	1	1	-	-	-	-
(Bart)	1	55	-	55	-	-	-
(Nine Points)	1	4	4	-	-	-	-
Brecknock	-	-	-	-	-	-	-
(Bowmansville)	2	70	12	58	-	-	-
Caernarvon	1	1	1	-	-	-	-
(Churchtown)	1	67	-	67	-	-	-
Clay	2	5	5	-	-	-	-
(Hopeland)	1	55	-	55	-	-	-
Conestoga	1	1	1	-	-	-	-
Conoy	-	-	-	-	-	-	-
(Bainbridge)	3	43	18	25	-	-	-
(Falmouth)	1	2	2	-	-	-	-
Earl	3	28	28	-	-	-	-
(Martindale)	2	60	5	55	-	-	-
East Cocalico	3	34	3	31	-	-	-
(Reamstown)	3	93	7	86	-	-	-
East Donegal	2	10	10	-	-	-	-
(Florin)	3	130	5	125	-	-	-
(Maytown)	3	111	6	105	-	-	-
East Earl	4	91	18	73	-	-	-
(Blue Ball)	3	550	13	-	-	-	537
(East Earl)	1	2	2	-	-	-	-
East Hempfield (1)	8	134	27	107	-	-	-
(Landisville)	5	205	31	174	-	-	-
East Lampeter (1)	11	2,054	24	61	108	570	1,291
(Bird-in-Hand)	3	54	4	50	-	-	-
(Soudersburg)	1	6	6	-	-	-	-
Eden	3	128	1	127	-	-	-
Elizabeth	4	9	9	-	-	-	-
Ephrata	11	136	83	53	-	-	-
Fulton	1	3	3	-	-	-	-
Lancaster (1)	11	518	61	141	316	-	-
Leacock	3	66	14	52	-	-	-
(Gordonville)	1	6	6	-	-	-	-
(Intercourse)	6	133	12	121	-	-	-
Manheim (1)	16	821	43	243	255	280	-
Manor	5	83	9	74	-	-	-
Mount Joy	2	26	26	-	-	-	-
(Florin)	1	182	-	-	182	-	-
(Rheems)	2	33	4	29	-	-	-
Paradise	2	17	17	-	-	-	-
(Paradise)	2	104	6	98	-	-	-
Penn	1	1,237	-	-	-	-	1,237
(Penryn)	1	3	3	-	-	-	-
Pequea	3	19	19	-	-	-	-
(West Willow)	1	11	11	-	-	-	-
Providence	4	56	6	50	-	-	-
Rapho	1	1	1	-	-	-	-
Sadsbury	1	1	1	-	-	-	-
Salisbury	5	9	9	-	-	-	-
(Gap)	1	50	-	50	-	-	-
(Kinzers)	3	8	8	-	-	-	-
Strasburg	5	70	15	55	-	-	-
Upper Leacock	3	70	2	68	-	-	-
(Bareville)	3	53	10	43	-	-	-
(Leacock)	1	12	12	-	-	-	-
(Leola)	4	288	33	46	-	209	-
Warwick (1)	6	33	33	-	-	-	-
(Millway)	1	14	14	-	-	-	-
(Rothsville)	3	58	9	49	-	-	-
West Cocalico	1	3	3	-	-	-	-
(Reinholds)	3	54	10	44	-	-	-
West Donegal	2	13	13	-	-	-	-
West Earl	-	-	-	-	-	-	-
(Brownstown)	3	172	15	22	135	-	-
West Hempfield	6	948	24	81	-	-	843
West Lampeter (1)	7	74	37	37	-	-	-



TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Lawrence County, total	140	12,549	468	1,590	1,496	2,416	6,579
Tabulated city and borough							
Ellwood City (1)	24	4,009	72	166	546	621	2,604
New Castle (1)	49	5,871	148	680	705	363	3,975
Boroughs							
Bessemer (1)	3	384	5	-	-	379	-
Ellport	3	164	12	47	105	-	-
Enon Valley	1	18	18	-	-	-	-
New Wilmington (1)	6	46	24	22	-	-	-
Volant	2	4	4	-	-	-	-
Wampum (1)	5	270	13	55	-	202	-
Townships							
Hickory (1)	3	109	24	85	-	-	-
Little Beaver	3	8	8	-	-	-	-
Mahoning (1)	2	50	18	32	-	-	-
(Hillsville)	2	49	12	37	-	-	-
Neshannock	3	30	5	25	-	-	-
North Beaver (1)	4	382	12	-	140	230	-
Pulaski (1)	2	5	5	-	-	-	-
Scott	1	2	2	-	-	-	-
Shenango (1)	5	204	15	189	-	-	-
Taylor (1)	1	318	-	-	-	318	-
(Mahoningtown)	1	3	3	-	-	-	-
(West Pittsburg)	5	500	2	195	-	303	-
Union	4	23	23	-	-	-	-
Washington	1	13	13	-	-	-	-
Wayne	1	3	3	-	-	-	-
(Chewton)	1	5	5	-	-	-	-
Wilmington (1)	2	10	10	-	-	-	-
Rural delivery							
New Castle	6	69	12	57	-	-	-
(1) Urban fringe							
Lebanon County, total	179	13,451	553	2,630	3,268	4,133	2,867
Tabulated city							
Lebanon	81	8,480	231	1,240	1,792	2,350	2,867
Boroughs							
Cleona	8	83	10	73	-	-	-
Cornwall	1	10	10	-	-	-	-
Jonestown	1	22	-	22	-	-	-
Myerstown	9	1,058	33	78	108	839	-
Palmyra	16	950	57	290	367	236	-
Richland	6	369	37	123	-	209	-
Townships							
Annville	13	1,017	19	142	357	499	-
Bethel	1	54	-	54	-	-	-
(Fredericksburg)	3	428	-	-	428	-	-
East Hanover	2	2	2	-	-	-	-
Heidelberg	1	1	1	-	-	-	-
(Schaefferstown)	2	103	1	-	102	-	-
Jackson	5	122	8	114	-	-	-
Lebanon	1	14	14	-	-	-	-
Millcreek	2	160	-	46	114	-	-
(Newmanstown)	1	57	-	57	-	-	-
(Sheridan)	2	94	1	93	-	-	-
North Cornwall	-	-	-	-	-	-	-
(Pleasant Hill)	1	15	15	-	-	-	-
North Lebanon	3	49	3	46	-	-	-
South Annville	2	9	9	-	-	-	-
South Lebanon	2	81	2	79	-	-	-
(Rexmont)	3	78	35	43	-	-	-
South Londonderry	2	16	16	-	-	-	-
(Campbelltown)	2	7	7	-	-	-	-
(Colebrook)	2	61	4	57	-	-	-
(Lawn)	1	8	8	-	-	-	-
West Cornwall	-	-	-	-	-	-	-
(Quentin)	1	34	-	34	-	-	-
West Lebanon	1	12	12	-	-	-	-
Rural delivery							
Lebanon	4	57	18	39	-	-	-

TABLE 1: NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

(Municipalities and place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Lehigh County, total	423	33,817	1,583	6,885	6,008	6,948	12,393
Tabulated cities							
Allentown	257	22,941	1,007	4,658	3,743	2,775	10,758
Bethlehem	19	2,037	69	425	104	1,439	-
Boroughs							
Alburtis	4	256	3	75	178	-	-
Catasauqua (1)	11	1,310	11	212	522	-	565
Coopersburg	13	351	54	162	135	-	-
Coplay (1)	2	374	-	69	-	305	-
Emmaus (1)	27	1,340	101	201	689	349	-
Fountain Hill (1)	6	762	0	127	110	525	-
Macungie	6	509	27	64	133	285	-
Slatington	12	882	16	240	135	491	-
Townships							
Lower Macungie	2	1	1	-	-	-	-
(East Texas)	1	34	-	34	-	-	-
(Wescosville)	2	21	21	-	-	-	-
Lower Milford	-	-	-	-	-	-	-
(Limeport)	1	10	10	-	-	-	-
Lynn	1	6	6	-	-	-	-
North Whitehall	2	18	18	-	-	-	-
(Balliettsville)	1	1	1	-	-	-	-
(Lauries' Station)	2	27	2	25	-	-	-
(Ormrod)	1	155	-	-	155	-	-
Salisbury	3	25	25	-	-	-	-
South Whitehall (1)	6	607	20	40	-	-	547
Upper Macungie	1	13	13	-	-	-	-
(Fogelsville)	1	70	-	70	-	-	-
(Trexlerstown)	2	312	19	-	-	293	-
Upper Milford	-	-	-	-	-	-	-
(Vera Cruz)	1	15	15	-	-	-	-
(Zionsville)	1	9	9	-	-	-	-
Upper Saucon	3	43	7	36	-	-	-
(Center Valley)	1	11	11	-	-	-	-
Washington	3	69	2	67	-	-	-
(Emerald)	1	6	6	-	-	-	-
(Slatedale)	3	51	3	48	-	-	-
Whitehall (1)	6	71	13	58	-	-	-
(Cementon)	2	369	-	-	104	265	-
(Egypt)	2	223	2	-	-	221	-
(Fullerton)	9	754	34	197	-	-	523
(Stiles)	1	31	-	31	-	-	-
(West Catasauqua)	2	17	17	-	-	-	-
Rural delivery							
Allentown	5	86	40	46	-	-	-

(1) Urban fringe

TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Luzerne County, total	607	37,675	1,722	10,787	8,965	10,648	5,553
Tabulated cities and boroughs							
Hazleton	79	4,900	215	1,630	1,113	1,215	727
Kingston	35	2,746	47	577	663	713	746
Nanticoke	16	1,238	30	330	133	745	-
Pittston	28	2,035	55	806	556	-	618
Wilkes-Barre	167	11,954	540	1,935	3,111	4,296	2,072
Boroughs							
Ashley (1)	10	586	15	179	131	261	-
Avoca (1)	3	42	20	22	-	-	-
Conyngham	3	52	9	43	-	-	-
Dallas (1)	4	796	25	-	-	771	-
Dupont (1)	5	251	-	251	-	-	-
Duryea (1)	8	234	11	223	-	-	-
Edwardsville(1)	8	348	10	338	-	-	-
Exeter (1)	10	796	4	168	362	262	-
Forty Fort (1)	12	251	49	202	-	-	-
Freeland	16	742	30	264	448	-	-
Hughestown (1)	2	38	3	35	-	-	-
Larksville (1)	6	125	19	106	-	-	-
Laurel Run (1)	1	24	-	24	-	-	-
Luzerne (1)	11	324	22	202	100	-	-
Nescopeck	7	199	12	187	-	-	-
Plymouth (1)	12	485	31	309	145	-	-
Shickshinny	5	115	17	98	-	-	-
Swoyersville (1)	11	635	26	213	-	396	-
West Hazleton	9	609	21	308	280	-	-
West Pittston (1)	17	1,746	87	153	662	-	844
West Wyoming (1)	7	453	12	141	-	300	-
White Haven	4	266	0	100	166	-	-
Wyoming (1)	15	935	24	432	275	204	-
Townships							
Bear Creek	2	142	-	-	142	-	-
Black Creek	-	-	-	-	-	-	-
(Fern Glen)	1	46	-	46	-	-	-
Butler	1	3	3	-	-	-	-
(Drums)	3	64	7	57	-	-	-
(St. Johns)	1	0	0	-	-	-	-
Conyngham	-	-	-	-	-	-	-
(Mocana qua)	2	224	-	96	128	-	-
Dallas	4	46	15	31	-	-	-
Fairmount	1	5	5	-	-	-	-
Fairview	-	-	-	-	-	-	-
(Mountaintop)	1	546	-	-	-	-	546
Franklin	2	23	23	-	-	-	-
Hanover (1)	12	829	60	54	-	715	-
(Askam)	1	1	1	-	-	-	-
Hazle	5	281	22	150	109	-	-
(Drifton)	1	15	15	-	-	-	-
(Lattimer Mines)	3	12	12	-	-	-	-
Hollenback	1	4	4	-	-	-	-
Hunlock	1	1	1	-	-	-	-
Huntington	3	10	10	-	-	-	-
(Huntington Mills)	1	15	15	-	-	-	-
Jackson	1	5	5	-	-	-	-
Jenkins	1	45	-	45	-	-	-
Kingston	2	17	17	-	-	-	-
(Trucksville)	4	54	28	26	-	-	-
Lake	1	5	5	-	-	-	-
Newport	-	-	-	-	-	-	-
(Glen Lyon)	3	225	-	105	120	-	-
Pittston	1	57	-	57	-	-	-
Plains (1)	4	85	34	51	-	-	-
(Hudson)	3	378	30	-	-	348	-
(Miners Mills)	2	197	-	197	-	-	-
(Parsons)	1	60	-	60	-	-	-
(Plains)	10	542	18	203	321	-	-
(Plainsville)	1	40	-	40	-	-	-
Plymouth (1)	1	3	3	-	-	-	-
(West Nanticoke)	2	17	17	-	-	-	-
Ross	-	-	-	-	-	-	-
(Sweet Valley)	1	55	-	55	-	-	-
Sugarloaf	1	1	1	-	-	-	-
(Sybertsville)	2	84	17	67	-	-	-
Wilkes-Barre (1)	3	106	5	101	-	-	-
Wright	-	-	-	-	-	-	-
(Crestwood Industrial Park)	2	460	-	38	-	422	-
Rural delivery							
Avoca (1)	1	32	-	32	-	-	-
Shickshinny	2	7	7	-	-	-	-
Wilkes-Barre	1	8	8	-	-	-	-

(1) Urban fringe

TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Lycoming County, total	195	16,895	592	3,098	1,802	5,377	6,026
Tabulated city Williamsport	101	10,357	239	1,821	1,436	3,111	3,750
Boroughs							
DuBoistown	2	6	6	-	-	-	-
Hughesville	8	404	32	224	148	-	-
Jersey Shore	9	234	17	217	-	-	-
Montgomery	13	1,199	34	336	113	-	716
Montoursville	9	1,938	33	-	105	999	801
Muncy	10	2,171	16	129	-	1,267	759
Picture Rocks	3	76	27	49	-	-	-
Salladasburg	2	2	2	-	-	-	-
South Williamsport	6	261	30	231	-	-	-
Townships							
Anthony	1	0	0	-	-	-	-
Armstrong	1	27	-	27	-	-	-
Cascade	1	2	2	-	-	-	-
Clinton	1	9	9	-	-	-	-
Fairfield	1	0	0	-	-	-	-
Gamble	1	5	5	-	-	-	-
Hepburn	2	30	30	-	-	-	-
(Cogan Station)	2	5	5	-	-	-	-
Jackson	2	17	17	-	-	-	-
Lewis	1	4	4	-	-	-	-
Loyalsock	5	74	32	42	-	-	-
Muncy Creek	2	24	2	22	-	-	-
Old Lycoming	3	16	16	-	-	-	-
Penn	1	6	6	-	-	-	-
Porter	1	4	4	-	-	-	-
Washington	1	3	3	-	-	-	-
Wolf	1	1	1	-	-	-	-
Rural delivery							
Jersey Shore	2	11	11	-	-	-	-
Williamsport	3	9	9	-	-	-	-
McKean County, total	104	6,696	385	999	217	3,205	1,890
Tabulated city Bradford	40	3,739	117	529	-	1,705	1,388
Boroughs							
Eldred	3	361	5	-	-	356	-
Kane	15	571	44	85	-	442	-
Lewis Run	2	121	6	-	115	-	-
Mount Jewett	5	103	22	81	-	-	-
Port Allegany	8	819	41	24	-	-	-
Smethport	7	59	59	-	-	252	252
Townships							
Bradford	2	241	-	21	-	220	-
(Custer City)	2	38	7	31	-	-	-
Ceres	1	4	4	-	-	-	-
Eldred	1	86	-	86	-	-	-
Foster	3	25	25	-	-	-	-
Hamilton	-	-	-	-	-	-	-
(Ludlow)	1	2	2	-	-	-	-
Keating	-	-	-	-	-	-	-
(Farmers Valley)	1	230	-	-	-	230	-
(Gifford)	1	4	4	-	-	-	-
(Marvindale)	1	12	12	-	-	-	-
Liberty	1	5	5	-	-	-	-
Sergeant	-	-	-	-	-	-	-
(Clermont)	1	70	-	70	-	-	-
Wetmore	7	136	14	20	102	-	-
(Sergeant)	2	70	18	52	-	-	-



TABLE 1: NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

(Municipalities and (place names))	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Mercer County, total	139	19,370	537	1,411	236	1,573	15,613
Tabulated cities and boroughs							
Farrell (1)	12	4,816	62	26	-	-	4,728
Greenville	13	1,255	37	168	113	428	509
Grove City	18	2,360	49	405	-	-	1,906
Sharon (1)	24	7,372	118	301	123	-	6,830
Boroughs							
Fredonia	1	2	2	-	-	-	-
Jamestown	2	362	-	36	-	326	-
Mercer	5	269	10	55	-	204	-
Sandy Lake	4	53	9	44	-	-	-
Sharpville (1)	8	1,015	27	186	-	-	802
Stoneboro	1	0	0	-	-	-	-
West Middlesex (1)	6	62	35	27	-	-	-
Wheatland (1)	5	1,197	44	-	-	315	838
Townships							
Coolspring	1	8	8	-	-	-	-
Fairview	1	1	1	-	-	-	-
French Creek	-	-	-	-	-	-	-
(Carlton)	1	3	3	-	-	-	-
Greene	2	8	8	-	-	-	-
Hempfield	4	31	31	-	-	-	-
Hickory (1)	8	70	38	32	-	-	-
Lake	1	5	5	-	-	-	-
Otter Creek	1	4	4	-	-	-	-
Perry	3	47	4	43	-	-	-
(Clarks Mills)	2	3	3	-	-	-	-
(Hadley)	1	2	2	-	-	-	-
Pine	5	25	25	-	-	-	-
Pymatuning	2	88	-	88	-	-	-
Sandy Lake	1	2	2	-	-	-	-
Shenango (1)	1	0	0	-	-	-	-
South Pymatuning	1	4	4	-	-	-	-
Sugar Grove	1	300	-	-	-	300	-
West Salem	1	4	4	-	-	-	-
Rural delivery							
Mercer	2	2	2	-	-	-	-
Stoneboro	1	0	0	-	-	-	-
(1) Urban fringe							
Mifflin County, total	55	6,184	153	902	241	390	4,498
Tabulated borough							
Lewistown	19	3,401	41	418	-	-	2,942
Borough							
Burnham	3	1,668	6	-	106	-	1,556
Townships							
Armagh	3	9	9	-	-	-	-
(Milroy)	1	64	-	64	-	-	-
(Naginey)	1	5	5	-	-	-	-
Brown	3	162	1	161	-	-	-
(Reedsville)	2	2	2	-	-	-	-
Decatur	2	8	8	-	-	-	-
Derry	4	18	18	-	-	-	-
(Maitland)	1	17	17	-	-	-	-
Granville	2	141	6	-	135	-	-
(Hawstone)	1	97	-	97	-	-	-
Menno	-	-	-	-	-	-	-
(Allensville)	1	48	-	48	-	-	-
Oliver	3	10	10	-	-	-	-
Union	-	-	-	-	-	-	-
(Belleville)	7	508	26	92	-	390	-
Wayne	2	26	4	22	-	-	-

Figure 4  
**MANUFACTURING EMPLOYMENT FOR MUNICIPALITIES IN  
 SOUTHEAST PENNSYLVANIA**

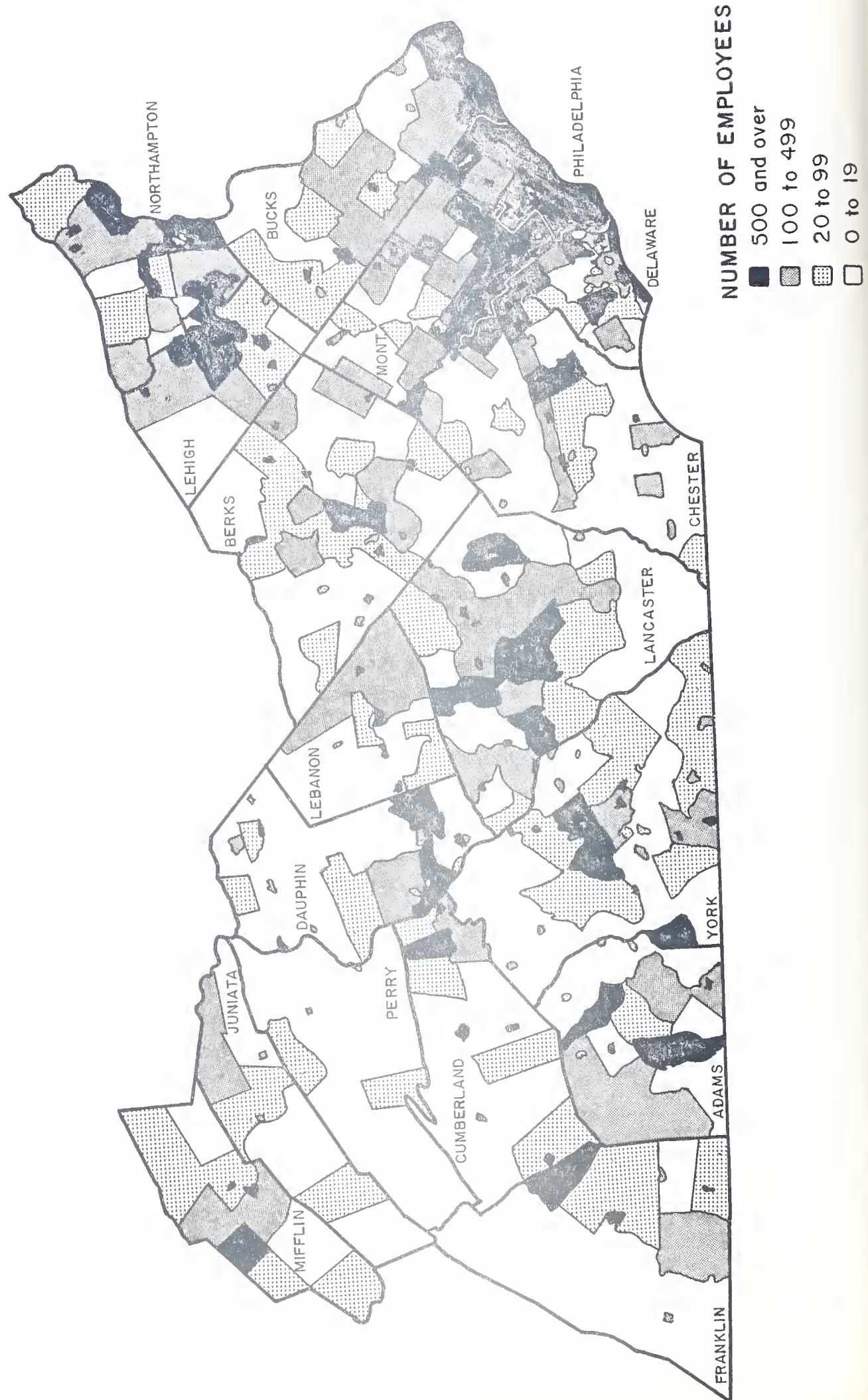


TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

(Municipalities and (place names))	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Monroe County, total	90	4,087	268	1,514	572	641	1,092
Boroughs							
Delaware Water Gap	1	531	-	-	-	-	531
East Stroudsburg	30	1,782	108	297	175	641	561
Mount Pocono	1	1	1	-	-	-	-
Stroudsburg	26	1,086	60	629	397	-	-
Townships							
Barrett	1	31	-	31	-	-	-
(Canadensis)	1	4	4	-	-	-	-
(Cresco)	2	7	7	-	-	-	-
(Mountainhome)	1	30	-	30	-	-	-
Chestnuthill	-	-	-	-	-	-	-
(Brodheads ville)	3	100	0	100	-	-	-
(Effort)	1	57	-	57	-	-	-
Coolbaugh	-	-	-	-	-	-	-
(Tobyhanna)	2	73	-	73	-	-	-
Eldred	1	32	-	32	-	-	-
(Kunkletown)	3	73	2	71	-	-	-
Hamilton	1	38	-	38	-	-	-
(Bossardsville)	1	8	8	-	-	-	-
Jackson	1	0	0	-	-	-	-
Middle Smithfield	1	3	3	-	-	-	-
Pocono	-	-	-	-	-	-	-
(Swiftwater)	1	90	-	90	-	-	-
Polk	-	-	-	-	-	-	-
(Gilbert)	1	1	1	-	-	-	-
(Kresgeville)	2	75	9	66	-	-	-
Smithfield	-	-	-	-	-	-	-
(Minisink Hills)	1	2	2	-	-	-	-
Stroud	6	52	52	-	-	-	-
(Analomink)	1	2	2	-	-	-	-
Tobyhanna	-	-	-	-	-	-	-
(Pocono Pines)	1	9	9	-	-	-	-
Montgomery County, total	787	62,557	2,723	12,736	10,343	10,033	26,722
Tabulated cities and boroughs							
Conshohocken (1)	31	4,410	108	384	166	490	3,262
Lansdale	51	7,317	164	897	1,200	1,024	4,032
Norristown	62	3,208	182	1,420	881	725	-
Pottstown	61	9,528	193	1,171	1,118	704	6,342
Boroughs							
Ambler (1)	13	1,255	44	75	251	-	885
Bridgeport (1)	27	1,998	103	423	593	305	574
Collegeville	5	254	6	104	144	-	-
East Greenville	12	852	1	273	578	-	-
Green Lane	4	95	22	73	-	-	-
Hatboro (1)	26	654	124	530	-	-	-
Hatfield	17	646	62	208	376	-	-
Jenkintown (1)	12	3,118	52	169	-	-	2,897
Narberth (1)	1	1	1	-	-	-	-
North Wales	16	849	39	477	-	333	-
Pennsburg	11	471	38	253	180	-	-
Red Hill	11	668	23	107	538	-	-
Rockledge (1)	7	291	47	21	-	223	-
Royersford	22	1,429	30	795	130	474	-
Schwenksville	3	70	5	65	-	-	-
Souderton	22	1,401	81	312	595	413	-
Telford	9	383	12	266	105	-	-
Trappe	1	92	-	92	-	-	-
West Conshohocken (1)	8	541	48	164	329	-	-
Townships							
Abington (1)	-	-	-	-	-	-	-
(Abington)	1	5	5	-	-	-	-
(Glenside)	14	257	58	199	-	-	-
(Meadowbrook)	1	15	15	-	-	-	-
(North Hills)	2	5	5	-	-	-	-
(Roslyn)	3	2	2	-	-	-	-
Cheltenham (1)	4	127	18	-	109	-	-
(Cheltenham)	9	189	28	161	-	-	-
(Elkins Park)	5	41	21	20	-	-	-
(La Mott)	1	10	10	-	-	-	-
(Laverock)	1	1	1	-	-	-	-
(Melrose Park)	2	5	5	-	-	-	-
(Wyncote)	1	48	-	48	-	-	-
Douglass	1	65	-	65	-	-	-
(Gilbertsville)	3	124	6	118	-	-	-
(Sassamansville)	2	39	6	33	-	-	-
East Norriton (1)	7	196	31	65	100	-	-
Franconia	1	21	-	21	-	-	-
(Franconia)	3	110	1	109	-	-	-
Hatfield	13	947	45	228	-	-	674
(Colmar)	3	34	8	26	-	-	-
(Line Lexington)	1	18	18	-	-	-	-
Horsham	4	302	4	-	298	-	-
(Horsham)	6	147	21	-	126	-	-
(Prospectville)	1	2	2	-	-	-	-
Limerick	3	54	24	30	-	-	-
(Linfield)	4	324	12	88	-	224	-
Lower Frederick	-	-	-	-	-	-	-
(Obelisk)	1	44	-	44	-	-	-
Lower Gwynedd	1	365	-	-	-	365	-
(Springhouse)	2	30	6	24	-	-	-
Lower Merion (1)	3	210	3	40	167	-	-
(Ardmore)	3	29	29	-	-	-	-
(Bala-Cynwyd)	5	64	18	46	-	-	-
(Bryn Mawr)	3	145	2	33	110	-	-
(Gladwyne)	1	28	-	28	-	-	-
(Haverford)	1	4	4	-	-	-	-
(Merion)	2	424	5	-	-	419	-
(Pencoyd)	1	18	18	-	-	-	-
(Rosemont)	3	54	9	45	-	-	-
(Wynnewood)	2	4	4	-	-	-	-



TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF  
ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA,  
BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Montgomery County							
Townships (continued)							
Lower Moreland	5	117	10	-	107	-	-
(Bethayres) (1)	7	598	1	209	175	213	-
(Huntingdon Valley) (1)	5	142	16	126	-	-	-
Lower Pottsgrove	4	124	7	117	-	-	-
Lower Providence (1)	4	1,216	17	52	147	-	1,000
(Eagleville)	7	67	34	33	-	-	-
(Evansburg)	1	6	6	-	-	-	-
(Harleysville)	4	54	29	25	-	-	-
(Mont Clare)	1	31	-	31	-	-	-
Lower Salford	-	-	-	-	-	-	-
(Vernfield)	1	18	18	-	-	-	-
Marlborough	2	7	7	-	-	-	-
(Sumneytown)	1	74	-	74	-	-	-
Montgomery	2	21	21	-	-	-	-
(Montgomeryville)	7	152	36	116	-	-	-
Perkiomen	1	10	10	-	-	-	-
Plymouth (1)	12	902	32	173	373	324	-
(Earnest)	1	1	1	-	-	-	-
Salford	1	19	19	-	-	-	-
Skippack	-	-	-	-	-	-	-
(Creamery)	1	18	18	-	-	-	-
(Rahns)	1	65	-	65	-	-	-
(Skippack)	2	16	16	-	-	-	-
Springfield	1	1	1	-	-	-	-
(Flourtown)	2	55	1	54	-	-	-
(Lafayette Hill)	1	3	3	-	-	-	-
(Oak Lane)	1	5	5	-	-	-	-
(Wyndmoor)	8	657	38	179	177	263	-
Towamencin	-	-	-	-	-	-	-
(Kulpsville)	1	11	11	-	-	-	-
Upper Dublin (1)	2	77	14	63	-	-	-
(Dresher)	2	484	8	-	-	476	-
(Fort Washington)	10	1,004	21	142	302	539	-
(Oreland)	5	131	29	102	-	-	-
Upper Gwynedd	6	1,291	9	147	-	388	747
Upper Hanover	3	13	13	-	-	-	-
(Palm)	1	3	3	-	-	-	-
Upper Merion (1)	14	259	68	191	-	-	-
(King of Prussia)	7	690	3	144	-	543	-
(Port Kennedy)	1	126	-	-	126	-	-
(Swedeland)	1	40	-	40	-	-	-
Upper Moreland (1)	3	71	6	65	-	-	-
(Willow Grove)	29	495	139	356	-	-	-
Upper Pottsgrove	1	9	9	-	-	-	-
Upper Providence	1	3	3	-	-	-	-
(Arcola)	1	0	0	-	-	-	-
(Oaks)	9	2,563	17	48	166	634	1,698
Upper Salford	1	8	8	-	-	-	-
West Norriton (1)	7	80	46	34	-	-	-
(Betzwood)	1	532	-	-	-	-	532
(Jeffersonville)	1	19	19	-	-	-	-
West Pottsgrove	1	107	-	-	107	-	-
(Stowe)	8	1,586	27	-	395	-	1,164
Whitemarsh (1)	6	3,299	-	88	-	296	2,915
(Miquon)	1	0	0	-	-	-	-
(Plymouth Meeting)	5	703	-	113	174	416	-
(Spring Mill)	1	98	-	98	-	-	-
(Whitemarsh)	1	9	9	-	-	-	-
Whitpain	1	0	0	-	-	-	-
(Belfry)	1	10	10	-	-	-	-
Worcester	4	257	15	-	-	242	-
(Cedars)	1	2	2	-	-	-	-
(Fairview)	2	49	9	40	-	-	-
(West Point)	5	64	39	25	-	-	-
Rural Delivery							
Collegeville	1	7	7	-	-	-	-
Norristown	1	4	4	-	-	-	-
Royersford	2	36	0	36	-	-	-

(1) Urban fringe



TABLE 1: NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

(Municipalities and place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Montour County, total	13	2,137	26	24	172	539	1,376
Borough							
Danville	9	2,124	13	24	172	539	1,376
Townships							
Anthony	1	3	3	-	-	-	-
Derry	1	1	1	-	-	-	-
Mahoning	2	9	9	-	-	-	-
Northampton County, total	391	45,935	977	7,869	4,004	12,142	20,943
Tabulated cities and boroughs							
Bethlehem	63	21,684	194	1,256	710	1,592	17,932
Easton	76	7,339	211	1,410	838	2,574	2,306
Northampton (1)	19	2,171	34	278	567	587	705
Boroughs							
Bangor	31	2,035	66	1,002	188	779	-
Bath	10	267	12	255	-	-	-
Chapman Quarries	1	23	-	23	-	-	-
East Bangor	2	54	14	40	-	-	-
Glendon	1	24	-	24	-	-	-
Hellertown (1)	11	522	43	160	-	319	-
Nazareth	22	1,828	73	225	511	1,019	-
Pen Argyl	24	1,914	26	829	343	716	-
Portland	4	123	0	123	-	-	-
Roseto	17	672	18	382	272	-	-
Stockertown	2	266	2	-	-	264	-
Tatamy	2	109	11	98	-	-	-
Walnutport	6	384	3	180	-	201	-
West Easton	5	317	4	71	-	242	-
Wilson	2	113	-	113	-	-	-
Wind Gap	8	389	29	237	123	-	-
Townships							
Bethlehem	4	58	12	46	-	-	-
(Brodhead)	1	257	-	-	-	257	-
(Butztown)	1	23	-	23	-	-	-
Bushkill	2	15	15	-	-	-	-
East Allen	2	336	-	31	-	305	-
Forks	3	35	10	25	-	-	-
(Sandts Eddy)	1	302	-	-	-	302	-
Lehigh	1	47	-	47	-	-	-
(Cherryville)	1	47	-	47	-	-	-
(Treichler)	1	38	-	38	-	-	-
Lower Mount Bethel	1	2	2	-	-	-	-
(Martins Creek)	5	616	-	164	-	452	-
Lower Nazareth	-	-	-	-	-	-	-
(Hecktown)	1	55	-	55	-	-	-
Lower Saucon (1)	2	116	9	-	107	-	-
Moore	-	-	-	-	-	-	-
(Moorestown)	1	70	-	70	-	-	-
Palmer	14	1,868	42	21	215	1,590	-
Plainfield	9	204	30	174	-	-	-
(Belfast)	1	29	-	29	-	-	-
Upper Mount Bethel	1	1	1	-	-	-	-
(Mount Bethel)	3	66	19	47	-	-	-
Upper Nazareth	4	622	14	-	-	608	-
Washington	8	196	6	190	-	-	-
(Flicksville)	1	30	-	30	-	-	-
Williams	6	572	13	94	130	335	-
(Raubsville)	4	42	42	-	-	-	-
Rural delivery							
Bethlehem	1	1	1	-	-	-	-
Easton	4	38	6	32	-	-	-
Nazareth	2	15	15	-	-	-	-

(1) Urban fringe

TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF  
ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA,  
BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Northumberland County, total	174	13,255	523	3,182	2,001	2,538	5,011
Tabulated city and boroughs							
Milton	20	2,684	14	529	321	274	1,546
Mount Carmel	14	1,247	50	234	274	689	-
Shamokin	37	3,126	97	892	552	473	1,112
Sunbury	25	1,954	90	510	309	545	500
Boroughs							
Herndon	4	69	27	42	-	-	-
Kulpmont	5	211	15	46	150	-	-
McEwensville	1	4	4	-	-	-	-
Northumberland	12	425	29	139	-	257	-
Riverside	3	909	-	102	-	-	807
Turbotville	3	69	23	46	-	-	-
Watson town	8	1,424	6	194	178	-	1,046
Townships							
Coal	3	86	7	79	-	-	-
(Strong)	1	18	18	-	-	-	-
Delaware	2	77	8	69	-	-	-
Jackson	3	308	8	-	-	300	-
Little Mahanoy	1	2	2	-	-	-	-
Lower Mahanoy	-	-	-	-	-	-	-
(Dalmatia)	2	52	17	35	-	-	-
Mount Carmel	3	72	9	63	-	-	-
(Keiser)	2	117	7	-	110	-	-
Point	3	108	1	-	107	-	-
Ralpho	3	12	12	-	-	-	-
(Elysburg)	4	116	1	115	-	-	-
Shamokin	1	3	3	-	-	-	-
(Kulp)	1	46	-	46	-	-	-
Upper Augusta	5	71	30	41	-	-	-
West Chillisquaque	-	-	-	-	-	-	-
(Potts Grove)	1	5	5	-	-	-	-
Zerbe	-	-	-	-	-	-	-
(Trevorton)	3	7	7	-	-	-	-
Rural delivery							
Milton	1	6	6	-	-	-	-
Shamokin	3	27	27	-	-	-	-
Perry County, total	43	776	211	565	-	-	-
Boroughs							
Bloomfield	3	9	9	-	-	-	-
Duncannon	6	158	51	107	-	-	-
Landisburg	1	37	-	37	-	-	-
Liverpool	3	85	4	81	-	-	-
Marysville (1)	2	97	-	97	-	-	-
Millerstown	6	94	44	50	-	-	-
Newport	5	208	15	193	-	-	-
Townships							
Carroll	1	2	2	-	-	-	-
Centre	-	-	-	-	-	-	-
(East Waterford)	1	6	6	-	-	-	-
Jackson	1	4	4	-	-	-	-
Oliver	3	10	10	-	-	-	-
Penn	1	1	1	-	-	-	-
Seville	1	5	5	-	-	-	-
Tuscarora	5	32	32	-	-	-	-
Tyrone	2	21	21	-	-	-	-
(Loysville)	2	7	7	-	-	-	-
(1) Urban fringe							
Philadelphia County, total	4,236	277,391	15,696	61,203	37,405	51,187	111,900

TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Pike County, total	20	83	83	-	-	-	-
Boroughs							
Matamoras	3	24	24	-	-	-	-
Milford	2	23	23	-	-	-	-
Townships							
Blooming Grove	1	4	4	-	-	-	-
(Blooming Grove)	1	2	2	-	-	-	-
Delaware	2	8	8	-	-	-	-
Dingman	3	3	3	-	-	-	-
Greene	-	-	-	-	-	-	-
(Panther)	1	0	0	-	-	-	-
Lehman	1	2	2	-	-	-	-
Milford	1	1	1	-	-	-	-
Palmyra	1	1	1	-	-	-	-
(Paupack)	1	3	3	-	-	-	-
Westfall	3	12	12	-	-	-	-
Potter County, total	36	982	142	350	118	372	-
Boroughs							
Austin	1	44	-	44	-	-	-
Coudersport	13	315	58	139	118	-	-
Galeton	7	497	17	108	-	372	-
Lewisville	1	3	3	-	-	-	-
Shinglehouse	3	30	10	20	-	-	-
Townships							
Eulalia	1	3	3	-	-	-	-
Genessee	1	9	9	-	-	-	-
(Genessee)	1	15	15	-	-	-	-
Harrison	1	1	1	-	-	-	-
Hebron	1	0	0	-	-	-	-
(Hebron)	1	4	4	-	-	-	-
Roulette	1	9	9	-	-	-	-
(Roulette)	2	42	3	39	-	-	-
Ulysses	2	10	10	-	-	-	-
Schuylkill County, total	286	19,056	813	4,998	5,520	3,945	3,780
Tabulated city and borough							
Pottsville	44	3,333	143	873	836	241	1,240
Shenandoah	16	787	57	268	222	240	-
Boroughs							
Ashland	12	362	50	157	155	-	-
Auburn	4	268	16	88	164	-	-
Coaldale	2	135	5	-	130	-	-
Cressona	5	1,670	0	88	107	-	1,475
Deer Lake	1	6	6	-	-	-	-
Frackville	8	650	14	29	394	213	-
Girardville	6	178	7	171	-	-	-
Gordon	3	42	14	28	-	-	-
Landingville	1	62	-	62	-	-	-
McAdoo	9	614	15	191	130	278	-
Mahanoy City	16	1,184	17	50	502	615	-
Minersville	10	457	5	194	258	-	-
Mount Carbon	3	145	19	126	-	-	-
New Philadelphia	2	123	-	123	-	-	-
New Ringgold	2	58	7	51	-	-	-
Orwigsburg	11	875	16	318	339	202	-
Palo Alto	1	19	19	-	-	-	-
Pine Grove	7	624	18	73	200	333	-
Port Carbon	8	597	9	105	263	220	-
Port Clinton	1	48	-	48	-	-	-
Ringtown	2	161	9	-	152	-	-
Saint Clair	8	536	39	79	-	418	-
Schuylkill Haven	27	1,933	49	660	325	899	-
Tamaqua	18	682	64	427	191	-	-
Tower City	6	521	8	-	227	286	-
Tremont	2	190	10	-	180	-	-

TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF  
ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA,  
BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					500 and over employees
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	
Schuylkill County (continued)							
Townships							
Butler	3	28	28	-	-	-	-
(Fountain Springs)	1	3	3	-	-	-	-
(Lavelle)	1	10	10	-	-	-	-
(Locustdale)	1	12	12	-	-	-	-
Cass	1	119	-	-	119	-	-
(Kaska)	1	59	-	59	-	-	-
East Brunswick	1	16	16	-	-	-	-
East Norwegian	-	-	-	-	-	-	-
(Cumbola)	1	102	-	-	102	-	-
East Union	-	-	-	-	-	-	-
(Sheppton)	2	130	-	-	130	-	-
Hegins	-	-	-	-	-	-	-
(Hegins)	4	96	8	88	-	-	-
(Valley View)	7	375	21	76	278	-	-
Hubley	1	4	4	-	-	-	-
Mahanoy	-	-	-	-	-	-	-
(Turkey Run)	1	60	-	60	-	-	-
North Manheim	1	5	5	-	-	-	-
North Union	-	-	-	-	-	-	-
(Nuremberg)	1	74	-	74	-	-	-
Pine Grove	4	52	11	41	-	-	-
Porter	-	-	-	-	-	-	-
(Muir)	1	36	-	36	-	-	-
(Reinerton)	2	66	0	66	-	-	-
Reilly	-	-	-	-	-	-	-
(Branchdale)	1	114	-	-	114	-	-
Rush	1	12	12	-	-	-	-
Ryan	2	6	6	-	-	-	-
Schuylkill	1	15	15	-	-	-	-
(Tuscarora)	1	46	-	46	-	-	-
South Manheim	1	3	3	-	-	-	-
Walker	2	1,072	7	-	-	-	1,065
(Adamsdale)	1	31	-	31	-	-	-
Wayne	1	45	-	45	-	-	-
Rural Delivery							
Pottsville	3	149	17	-	132	-	-
Schuylkill Haven	1	37	-	37	-	-	-
Tamaqua	2	19	19	-	-	-	-
Snyder County, total							
	50	1,972	154	1,115	703	-	-
Boroughs							
Beavertown	4	194	15	179	-	-	-
Freeburg	1	46	-	46	-	-	-
Middleburg	7	344	19	194	131	-	-
Selinsgrove	14	579	30	272	277	-	-
Shamokin Dam	1	78	-	78	-	-	-
Townships							
Franklin	3	60	20	40	-	-	-
Jackson	-	-	-	-	-	-	-
(Kratzerville)	1	42	-	42	-	-	-
Middlecreek	1	3	3	-	-	-	-
(Kreamer)	2	195	5	-	190	-	-
Monroe	1	52	-	52	-	-	-
(Hummels Wharf)	1	18	18	-	-	-	-
Perry	1	2	2	-	-	-	-
(Mount Pleasant Mills)	1	38	-	38	-	-	-
Spring	1	7	7	-	-	-	-
(Beaver Springs)	5	102	4	98	-	-	-
(Benfer)	1	10	10	-	-	-	-
Union	-	-	-	-	-	-	-
(Port Trevorton)	1	76	-	76	-	-	-
West Beaver	2	115	10	-	105	-	-
(McClure)	1	1	1	-	-	-	-
West Perry	1	10	10	-	-	-	-



TABLE 1: NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Somerset County, total	113	3,143	525	1,019	524	483	592
Boroughs							
Addison	2	3	3	-	-	-	-
Benson (Holsopple)	2	174	0	-	174	-	-
Berlin	5	99	21	78	-	-	-
Boswell	2	599	7	-	-	-	592
Central City	1	7	7	-	-	-	-
Confluence	2	15	15	-	-	-	-
Hooversville	1	12	12	-	-	-	-
Jennerstown	1	35	-	35	-	-	-
Meyersdale	8	412	74	76	-	262	-
Rockwood	4	113	14	99	-	-	-
Salisbury	2	129	-	29	100	-	-
Somerset	14	499	59	190	250	-	-
Windber	7	353	19	113	-	221	-
Townships							
Allegheny	2	5	5	-	-	-	-
Black	2	8	8	-	-	-	-
Conemaugh	2	81	19	62	-	-	-
Elk Lick	7	70	49	21	-	-	-
(West Salisbury)	1	4	4	-	-	-	-
Fairhope	1	3	3	-	-	-	-
Greenville	1	3	3	-	-	-	-
Jefferson	3	61	30	31	-	-	-
Jenner	4	8	8	-	-	-	-
Larimer	2	2	2	-	-	-	-
Lincoln	1	1	1	-	-	-	-
Northampton	2	9	9	-	-	-	-
Paint	4	27	27	-	-	-	-
Quemahoning	3	28	4	24	-	-	-
Shade	2	18	18	-	-	-	-
Somerset	14	222	68	154	-	-	-
(Friedens)	2	38	5	33	-	-	-
Stoneycreek	3	37	14	23	-	-	-
Summit	3	29	8	21	-	-	-
Upper Turkeyfoot	2	9	9	-	-	-	-
Unknown	1	30	-	30	-	-	-
Sullivan County, total	17	579	67	363	149	-	-
Boroughs							
Dushore	5	190	14	176	-	-	-
Forksville	2	31	6	25	-	-	-
Townships							
Cherry	-	-	-	-	-	-	-
(Mildred)	1	149	-	-	149	-	-
Colley	1	3	3	-	-	-	-
(Lopez)	1	90	-	90	-	-	-
Davidson	1	3	3	-	-	-	-
(Muncy Valley)	1	35	-	35	-	-	-
Elkland	3	27	27	-	-	-	-
Forks	1	37	-	37	-	-	-
Hillsgrove	1	14	14	-	-	-	-

TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF  
ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA,  
BY COUNTY: 1958 (continued)

40

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Susquehanna County, total	45	2,332	124	703	608	208	689
Boroughs							
Forest City	8	586	12	76	290	208	-
Great Bend	2	38	10	28	-	-	-
Hallstead	2	234	-	75	159	-	-
Hop Bottom	1	3	3	-	-	-	-
Montrose	7	276	11	106	159	-	-
New Milford	4	164	15	149	-	-	-
Susquehanna Depot	5	102	15	87	-	-	-
Thompson	1	10	10	-	-	-	-
Townships							
Bridgewater	3	29	9	20	-	-	-
(South Montrose)	3	703	14	-	-	-	689
Clifford	1	24	-	24	-	-	-
Great Bend	2	62	0	62	-	-	-
Harford	-	-	-	-	-	-	-
(Harford)	1	5	5	-	-	-	-
(Kingsley)	1	3	3	-	-	-	-
Lenox	1	0	0	-	-	-	-
(South Gibson)	1	76	-	76	-	-	-
New Milford	1	2	2	-	-	-	-
Oakland	1	15	15	-	-	-	-
Tioga County, total	46	2,919	201	353	100	885	1,380
Boroughs							
Blossburg	4	486	11	-	-	475	-
Elkland	2	850	7	-	-	-	843
Knoxville	1	3	3	-	-	-	-
Liberty	1	25	-	25	-	-	-
Mansfield	5	62	37	25	-	-	-
Wellsboro	12	794	49	108	100	-	537
Westfield	4	429	19	-	-	410	-
Townships							
Covington	2	55	4	51	-	-	-
(Covington)	2	76	10	66	-	-	-
Gaines	1	1	1	-	-	-	-
(Gaines)	1	5	5	-	-	-	-
Jackson	-	-	-	-	-	-	-
(Millerton)	1	6	6	-	-	-	-
Liberty	1	16	16	-	-	-	-
Middlebury	-	-	-	-	-	-	-
(Middlebury Center)	1	21	-	21	-	-	-
Morris	3	11	11	-	-	-	-
(Morris)	1	26	-	26	-	-	-
Nelson	-	-	-	-	-	-	-
(Nelson)	1	6	6	-	-	-	-
Osceola	-	-	-	-	-	-	-
(Osceola)	1	6	6	-	-	-	-
Ward	-	-	-	-	-	-	-
(Morris Run)	1	10	10	-	-	-	-
Westfield	-	-	-	-	-	-	-
(Cowanesque)	1	31	-	31	-	-	-

TABLE 1: NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Union County, total	35	1,666	79	529	550	-	508
Boroughs							
Lewisburg	12	992	33	171	280	-	508
Mifflinburg	5	392	3	248	141	-	-
New Berlin	4	119	9	110	-	-	-
Townships							
Buffalo	3	5	5	-	-	-	-
East Buffalo	3	16	16	-	-	-	-
Hartley	2	4	4	-	-	-	-
Kelly	1	1	1	-	-	-	-
Lewis	-	-	-	-	-	-	-
(Milmont)	1	4	4	-	-	-	-
(Swengel)	1	1	1	-	-	-	-
White Deer	3	132	3	-	129	-	-
Venango County, total	87	7,039	264	652	920	1,827	3,376
Tabulated boroughs							
Franklin	17	2,969	29	260	-	517	2,163
Oil City	22	1,879	109	88	469	-	1,213
Boroughs							
Cooperstown	2	3	3	-	-	-	-
Emlenton	3	194	11	-	183	-	-
Pleasantville	1	239	-	-	-	239	-
Rouseville	2	115	2	-	113	-	-
Townships							
Cherrytree	2	35	2	33	-	-	-
Clinton	1	5	5	-	-	-	-
Cornplanter	4	877	14	-	-	863	-
Cranberry	4	41	7	34	-	-	-
(Seneca)	1	25	-	25	-	-	-
(Van)	1	25	-	25	-	-	-
Frenchcreek	1	3	3	-	-	-	-
Mineral	1	6	6	-	-	-	-
Oakland	1	4	4	-	-	-	-
Oilcreek	1	1	1	-	-	-	-
Pinegrove	1	2	2	-	-	-	-
Rockland	2	3	3	-	-	-	-
(Kennerdell)	1	1	1	-	-	-	-
Scrubgrass	1	6	6	-	-	-	-
Sugarcreek	10	325	38	132	155	-	-
(Reno)	2	263	-	55	-	208	-
(Rocky Grove)	1	6	6	-	-	-	-
Rural delivery							
Oil City	4	12	12	-	-	-	-
Unknown	1	0	0	-	-	-	-
Warren County, total	83	5,123	317	993	1,102	969	1,742
Tabulated borough							
Warren	37	3,469	90	647	879	969	884
Boroughs							
Bear Lake	2	12	12	-	-	-	-
Clarendon	1	18	18	-	-	-	-
Tidioute	1	31	-	31	-	-	-
Youngsville	2	76	2	74	-	-	-
Townships							
Brokenstraw	-	-	-	-	-	-	-
(Irvine)	3	863	5	-	-	-	858
Columbia	1	17	17	-	-	-	-
Conewango	1	25	-	25	-	-	-
(North Warren)	4	46	15	31	-	-	-
(Starbrick)	1	19	19	-	-	-	-
Eldred	-	-	-	-	-	-	-
(Grand Valley)	1	22	-	22	-	-	-
Freehold	1	7	7	-	-	-	-
Glade	2	16	16	-	-	-	-
Kinzua	-	-	-	-	-	-	-
(Kinzua)	3	26	26	-	-	-	-
Mead	2	26	26	-	-	-	-
(Stoneham)	2	11	11	-	-	-	-
Pine Grove	1	3	3	-	-	-	-
(Akeley)	1	37	-	37	-	-	-
Pittsfield	2	12	12	-	-	-	-
(Garland)	1	68	-	68	-	-	-
(Pittsfield)	1	3	3	-	-	-	-
Pleasant	3	226	3	-	223	-	-
Sheffield	-	-	-	-	-	-	-
(Sheffield)	4	73	15	58	-	-	-
Sugar Grove	3	9	9	-	-	-	-
Triumph	3	8	8	-	-	-	-

TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF  
ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA,  
BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Washington County, total	206	18,668	752	2,152	1,962	672	13,130
Tabulated cities and boroughs							
Canonsburg	19	2,738	65	354	116	323	1,880
Charleroi	17	1,185	63	146	164	-	812
Donora	9	3,125	28	26	-	-	3,071
Monongahela	11	279	41	124	114	-	-
Washington	45	2,836	121	803	674	-	1,238
Boroughs							
Allenport	1	2,429	-	-	-	-	2,429
Beallsville	1	6	6	-	-	-	-
Bentleyville	2	11	11	-	-	-	-
Burgettstown	3	34	34	-	-	-	-
California	2	4	4	-	-	-	-
Claysville	2	23	2	21	-	-	-
Houston	8	82	53	29	-	-	-
McDonald	4	35	35	-	-	-	-
Midway	2	13	13	-	-	-	-
New Eagle	5	190	5	185	-	-	-
Roscoe	1	0	0	-	-	-	-
West Alexander	1	0	0	-	-	-	-
West Brownsville	1	34	-	34	-	-	-
Townships							
Amwell	-	-	-	-	-	-	-
(A mity)	1	9	9	-	-	-	-
Canton	11	3,804	2	46	507	349	2,909
Carroll	7	125	10	115	-	-	-
Cecil	1	32	-	32	-	-	-
Chartiers	-	-	-	-	-	-	-
(Meadow Lands)	4	139	18	-	121	-	-
Donegal	1	2	2	-	-	-	-
Jefferson	-	-	-	-	-	-	-
(Langeloth)	1	164	-	-	164	-	-
Mount Pleasant	1	2	2	-	-	-	-
(Hickory)	2	13	13	-	-	-	-
North Bethlehem	-	-	-	-	-	-	-
(Scenery Hill)	1	16	16	-	-	-	-
North Franklin	1	15	15	-	-	-	-
North Strabane	4	816	16	-	-	-	800
(Thompsonville)	1	5	5	-	-	-	-
Nottingham	3	4	4	-	-	-	-
Peters	-	-	-	-	-	-	-
(Anderson)	1	3	3	-	-	-	-
(McMurray)	1	8	8	-	-	-	-
Smith	3	18	18	-	-	-	-
(Atlasburg)	2	22	22	-	-	-	-
(Slovan)	3	89	30	59	-	-	-
Somerset	1	9	9	-	-	-	-
South Strabane	1	4	4	-	-	-	-
Union	2	15	15	-	-	-	-
(Elrama)	1	24	-	24	-	-	-
West Bethlehem	2	5	5	-	-	-	-
(West Finley)	1	1	1	-	-	-	-
West Pike Run	2	11	11	-	-	-	-
(Daisytown)	1	2	2	-	-	-	-
(Denbo)	1	14	14	-	-	-	-
(Millsboro)	1	3	3	-	-	-	-
Rural delivery							
Canonsburg	1	0	0	-	-	-	-
Eightyfour	2	56	-	56	-	-	-
Venetia	1	2	2	-	-	-	-
Washington	5	207	7	98	102	-	-
Unknown	1	5	5	-	-	-	-



TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Wayne County, total	63	2,369	232	353	779	391	614
Tabulated borough							
Honesdale	17	1,688	49	136	498	391	614
Boroughs							
Hawley	8	292	24	95	173	-	-
Starrucca	2	6	6	-	-	-	-
Waymart	2	12	12	-	-	-	-
Townships							
Buckingham	1	31	-	31	-	-	-
Clinton	-	-	-	-	-	-	-
(Aldenville)	1	32	-	32	-	-	-
Damascus	1	4	4	-	-	-	-
(Damascus)	3	13	13	-	-	-	-
Dreher	1	2	2	-	-	-	-
(Newfoundland)	1	12	12	-	-	-	-
(South Sterling)	1	2	2	-	-	-	-
Lake	-	-	-	-	-	-	-
(Lake Ariel)	2	17	17	-	-	-	-
Manchester	-	-	-	-	-	-	-
(Lookout)	2	4	4	-	-	-	-
(Stalker)	1	3	3	-	-	-	-
Mount Pleasant	-	-	-	-	-	-	-
(Pleasant Mount)	1	11	11	-	-	-	-
Preston	1	3	3	-	-	-	-
(Lake Como)	1	10	10	-	-	-	-
(Lakewood)	1	0	0	-	-	-	-
Salem	-	-	-	-	-	-	-
(Hamlin)	2	7	7	-	-	-	-
South Canaan	1	1	1	-	-	-	-
Sterling	1	3	3	-	-	-	-
(Couldsboro)	3	122	14	-	108	-	-
Texas	5	50	17	33	-	-	-
(White Mills)	4	44	18	26	-	-	-
Westmoreland County, total	408	38,349	1,504	3,384	3,625	6,232	23,604
Tabulated cities and boroughs							
Greensburg	44	2,095	169	532	507	-	887
Jeannette	34	4,722	120	221	269	1,369	2,743
Latrobe	19	3,641	30	246	288	302	2,775
Monessen	11	5,720	26	52	-	208	5,434
New Kensington (1)	33	5,265	82	191	510	751	3,731
City							
Arnold (1)	8	614	4	96	-	-	514
Boroughs							
Avonmore	2	294	-	40	-	254	-
Bolivar	4	76	19	57	-	-	-
Derry	4	600	1	34	144	421	-
Export	1	0	0	-	-	-	-
Hunker	1	31	-	31	-	-	-
Hyde Park	1	179	-	-	179	-	-
Irwin	14	244	79	165	-	-	-
Ligonier	5	54	12	42	-	-	-
Manor	5	74	7	67	-	-	-
Mount Pleasant	14	395	53	79	-	263	-
New Alexandria	1	11	11	-	-	-	-
New Florence	1	11	11	-	-	-	-
New Salem	1	108	-	-	108	-	-
North Belle Vernon	1	7	7	-	-	-	-
North Irwin	1	6	6	-	-	-	-
Oklahoma	2	9	9	-	-	-	-
Penn	2	248	-	77	171	-	-
Scottdale	19	791	101	118	260	312	-
Seward	1	4	4	-	-	-	-
Smithton	1	55	-	55	-	-	-
South Greensburg	4	1,798	4	40	-	350	1,404
Trafford (1)	2	139	1	-	138	-	-
Vandergrift (1)	12	1,907	51	94	-	-	1,762
West Leechburg	2	1,870	6	-	-	-	1,864
West Newton	12	570	18	117	108	327	-
Youngwood	7	1,331	47	42	-	-	1,242

TABLE 1: NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Westmoreland County (continued)							
Townships							
Allegheny	1	19	19	-	-	-	-
Bell	1	2	2	-	-	-	-
(Salina)	1	116	-	-	116	-	-
Cook	1	2	2	-	-	-	-
Derry	18	2,407	41	267	274	577	1,248
(Loyalhanna Park)	1	235	-	-	-	235	-
(New Derry)	1	20	-	20	-	-	-
Donegal	-	-	-	-	-	-	-
(Champion)	1	12	12	-	-	-	-
East Huntingdon	6	83	45	38	-	-	-
East Wheatfield	1	0	0	-	-	-	-
Fairfield	1	0	0	-	-	-	-
Franklin	3	35	15	20	-	-	-
(Murrysville)	6	93	45	48	-	-	-
(Sardis)	1	5	5	-	-	-	-
Hempfield	10	82	55	27	-	-	-
(Adamsburg)	1	1	1	-	-	-	-
(Darragh)	1	3	3	-	-	-	-
(Grapeville)	1	310	-	-	-	310	-
Ligonier	3	7	7	-	-	-	-
Lower Burrell	1	15	15	-	-	-	-
(Braeburn)	1	306	-	-	-	306	-
Mount Pleasant	11	322	47	26	249	-	-
(Acme)	2	3	3	-	-	-	-
(Calumet)	1	4	4	-	-	-	-
(Kecksburg)	1	60	-	60	-	-	-
(Mammoth)	1	17	17	-	-	-	-
(Norvelt)	1	247	-	-	-	247	-
North Huntingdon	8	301	10	291	-	-	-
(Hahntown)	1	3	3	-	-	-	-
(Larimer)	2	7	7	-	-	-	-
(Shafton)	1	118	-	-	118	-	-
(Westmoreland City)	1	4	4	-	-	-	-
Penn	1	11	11	-	-	-	-
(Claridge)	1	17	17	-	-	-	-
(Harrison City)	1	0	0	-	-	-	-
Rostraver	5	53	30	23	-	-	-
Saint Clare	1	10	10	-	-	-	-
Salem	-	-	-	-	-	-	-
(Crabtree)	1	1	1	-	-	-	-
Sewickley	2	1	1	-	-	-	-
(Herminie)	3	7	7	-	-	-	-
(Rillton)	1	3	3	-	-	-	-
South Huntingdon	-	-	-	-	-	-	-
(Wyano)	2	8	8	-	-	-	-
Unity	6	258	25	47	186	-	-
(Pleasant Unity)	2	8	8	-	-	-	-
(Whitney)	2	29	6	23	-	-	-
Upper Burrell	1	1	1	-	-	-	-
Rural Delivery							
Blairsville	1	24	-	24	-	-	-
Greensburg	11	139	65	74	-	-	-
Jeannette	1	6	6	-	-	-	-
Latrobe	5	47	47	-	-	-	-
Smithton	1	18	18	-	-	-	-
(1) Urban fringe							
Wyoming County, total							
	37	963	179	452	332	-	-
Boroughs							
Factoryville	1	0	0	-	-	-	-
Laceyville	5	55	30	25	-	-	-
Meshoppen	2	58	14	44	-	-	-
Nicholson	6	129	21	108	-	-	-
Tunkhannock	10	405	55	182	168	-	-
Townships							
Braintrim	1	14	14	-	-	-	-
Clinton	2	2	2	-	-	-	-
Falls	1	70	-	70	-	-	-
Lemon	1	5	5	-	-	-	-
Noxen	4	193	29	-	164	-	-
Tunkhannock	4	32	9	23	-	-	-

TABLE 1 : NUMBER OF MANUFACTURING ESTABLISHMENTS AND EMPLOYEES BY SIZE OF ESTABLISHMENT FOR MUNICIPALITIES IN PENNSYLVANIA, BY COUNTY: 1958 (continued)

Municipalities and (place names)	Number of manufacturing establishments	Size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
York County, total	568	42,557	1,683	8,631	8,292	13,313	10,638
Tabulated city and boroughs							
Hanover	82	5,094	210	1,170	1,256	1,811	647
Red Lion	39	2,083	112	614	1,045	312	-
York	178	13,835	606	2,707	2,071	4,334	4,117
Boroughs							
Dallastown	16	688	47	186	214	241	-
Delta	1	162	-	-	162	-	-
Dillsburg	5	496	15	79	-	402	-
Dover	2	47	17	30	-	-	-
East Prospect	4	56	1	55	-	-	-
Fawn Grove	2	282	-	-	282	-	-
Glen Rock	11	667	40	146	234	247	-
Hallam	6	302	15	147	140	-	-
Jacobus	1	23	-	23	-	-	-
Jefferson	1	66	-	66	-	-	-
Loganville	2	27	2	25	-	-	-
Manchester	3	62	1	61	-	-	-
Mount Wolf	8	553	34	33	181	305	-
New Freedom	7	795	14	131	-	650	-
New Salem	1	1	1	-	-	-	-
North York (1)	8	424	29	135	260	-	-
Railroad	2	202	-	54	148	-	-
Seven Valleys	2	157	11	-	146	-	-
Shrewsbury	2	53	0	53	-	-	-
Spring Grove	5	1,087	18	39	142	-	888
Stewartstown	4	413	9	-	129	275	-
Wellsville	3	112	12	100	-	-	-
West York (1)	21	918	70	428	420	-	-
Windsor	5	126	10	116	-	-	-
Wrightsville	11	482	27	354	101	-	-
Yoe	7	85	39	46	-	-	-
Yorkana	1	0	0	-	-	-	-
York Haven	3	521	4	-	152	365	-
Townships							
Carroll	1	0	0	-	-	-	-
Chanceford	3	67	7	60	-	-	-
Codorus	3	29	5	24	-	-	-
(Glenville)	1	2	2	-	-	-	-
Dover	3	22	22	-	-	-	-
East Manchester	2	28	28	-	-	-	-
Fairview	1	1	1	-	-	-	-
Fawn	-	-	-	-	-	-	-
(New Park)	1	24	-	24	-	-	-
(Woodbine)	1	35	-	35	-	-	-
Hellam	2	3	3	-	-	-	-
Hopewell	-	-	-	-	-	-	-
(Hopewell Center)	1	25	-	25	-	-	-
Jackson	4	22	22	-	-	-	-
(Bair)	2	38	2	36	-	-	-
Lower Windsor	1	12	12	-	-	-	-
Manchester	3	34	34	-	-	-	-
(Ernigsville)	1	44	-	44	-	-	-
North Codorus	1	5	5	-	-	-	-
Peach Bottom	2	54	5	49	-	-	-
Penn	5	1,216	14	56	-	432	714
Shrewsbury	1	3	3	-	-	-	-
(Hungerford)	2	238	-	76	162	-	-
Springettsbury (1)	8	3,639	7	50	-	1,257	2,325
(Stonybrook)	1	731	-	-	-	-	731
Spring Garden (1)	28	3,947	45	484	591	1,611	1,216
(Spring Garden)	3	180	6	174	-	-	-
Washington	1	3	3	-	-	-	-
West Manchester (1)	13	1,360	39	317	253	751	-
(Botts)	1	81	-	81	-	-	-
Windsor	4	62	6	56	-	-	-
(Craley)	1	21	-	21	-	-	-
York	12	414	41	170	203	-	-
(Spry)	1	2	2	-	-	-	-
Rural delivery							
Hanover	1	320	-	-	-	320	-
Red Lion	2	24	4	20	-	-	-
York	8	52	21	31	-	-	-

(1) Urban fringe

TABLE A: EMPLOYMENT IN MANUFACTURING INDUSTRIES IN PENNSYLVANIA BY SIZE OF ESTABLISHMENT, BY COUNTY: 1958

County	Number of manufacturing establishments	Employment by size of establishment					
		Total employees	0-19 employees	20-99 employees	100-199 employees	200-499 employees	500 and over employees
Total	16,989	1,345,674	60,454	233,548	168,004	263,015	620,653
Adams	97	6,549	336	1,412	1,300	2,838	663
Allegheny	1,592	169,879	6,584	16,451	11,713	22,838	112,293
Armstrong	82	6,170	321	626	728	844	3,651
Beaver	196	44,619	662	2,218	1,826	4,168	35,745
Bedford	46	1,224	154	344	250	476	-
Berks	602	47,969	1,971	10,193	5,814	13,768	16,223
Blair	122	10,272	472	1,496	951	3,552	3,801
Bradford	66	3,997	277	906	327	200	2,287
Bucks	438	28,946	1,785	5,653	3,586	3,844	14,078
Butler	158	10,551	619	1,413	1,377	2,233	4,909
Cambria	156	20,782	706	1,379	472	2,701	15,524
Cameron	14	1,877	75	28	-	-	1,774
Carbon	100	7,679	201	2,154	1,476	919	2,929
Centre	82	4,306	320	963	649	637	1,737
Chester	244	24,102	815	3,165	3,414	7,546	9,162
Clarion	63	2,205	243	476	328	346	812
Clearfield	117	5,667	394	1,233	2,067	1,469	504
Clinton	62	5,890	217	454	433	1,435	3,351
Columbia	110	9,223	394	1,740	574	1,761	4,754
Crawford	123	7,817	549	1,109	518	1,530	4,111
Cumberland	138	9,510	483	2,101	2,117	1,704	3,105
Dauphin	243	24,500	756	3,611	2,561	4,091	13,481
Delaware	330	46,365	1,157	3,032	4,027	6,774	31,375
Elk	64	7,174	190	518	917	620	4,929
Erie	430	35,046	1,514	5,254	5,004	6,839	16,435
Fayette	164	7,404	689	2,126	773	1,369	2,447
Forest	11	655	30	266	-	359	-
Franklin	129	9,396	421	1,584	662	2,616	4,113
Fulton	19	99	49	50	-	-	-
Greene	29	561	103	166	292	-	-
Huntingdon	50	2,888	142	560	140	536	1,510
Indiana	74	3,506	271	831	496	1,406	502
Jefferson	76	4,647	355	672	289	1,069	2,262
Juniata	38	1,080	109	645	326	-	-
Lackawanna	459	28,289	1,251	8,494	4,896	10,448	3,200
Lancaster	589	44,255	2,303	8,783	5,687	11,012	16,470
Lawrence	140	12,549	468	1,590	1,496	2,416	6,579
Lebanon	179	13,451	553	2,630	3,268	4,133	2,867
Lehigh	423	33,817	1,583	6,885	6,008	6,948	12,393
Luzerne	607	37,675	1,722	10,787	8,965	10,648	5,553
Lycoming	195	16,895	592	3,098	1,802	5,377	6,026
McKean	104	6,696	385	999	217	3,205	1,890
Mercer	139	19,370	537	1,411	236	1,573	15,613
Mifflin	55	6,184	153	902	241	390	4,498
Monroe	90	4,087	268	1,514	572	641	1,092
Montgomery	787	62,557	2,723	12,736	10,343	10,033	26,722
Montour	13	2,137	26	24	172	539	1,376
Northampton	391	45,935	977	7,869	4,004	12,142	20,943
Northumberland	174	13,255	523	3,182	2,001	2,538	5,011
Perry	43	776	211	565	-	-	-
Philadelphia	4,236	277,391	15,696	61,203	37,405	51,187	111,900
Pike	20	83	83	-	-	-	-
Potter	36	982	142	350	118	372	-
Schuylkill	286	19,056	813	4,998	5,520	3,945	3,780
Snyder	50	1,972	154	1,115	703	-	-
Somerset	113	3,143	525	1,019	524	483	592
Sullivan	17	579	67	363	149	-	-
Susquehanna	45	2,332	124	703	608	208	689
Tioga	46	2,919	201	353	100	885	1,380
Union	35	1,666	79	529	550	-	508
Venango	87	7,039	264	652	920	1,827	3,376
Warren	83	5,123	317	993	1,102	969	1,742
Washington	206	18,668	752	2,152	1,962	672	13,130
Wayne	63	2,369	232	353	779	391	614
Westmoreland	408	38,349	1,504	3,384	3,625	6,232	23,604
Wyoming	37	963	179	452	332	-	-
York	568	42,557	1,683	8,631	8,292	13,313	10,638

(1) Figures will vary slightly between these data and figures reported in our Release M-5 of 1958. See explanatory notes.



TABLE B: COMPARISON OF THE RESULTS OF THE TABULATION CHECK WITH THE RESULTS  
OF THE 1958 CENSUS OF MANUFACTURING INDUSTRIES, BY COUNTY: 1958

County	Number of manufacturing establishments			Number of employees		
	Original tabulation	Tabulation check	Difference	Original tabulation	Tabulation check	Difference
Total	16,995	16,989	-6	1,345,403	1,345,674	+271
Adams	97	97	-	6,549	6,549	-
Allegheny	1,589	1,592	+3	169,886	169,879	-7
Armstrong	83	82	-1	6,152	6,170	+18
Beaver	198	196	-2	44,700	44,619	-81
Bedford	46	46	-	1,224	1,224	-
Berks	602	602	-	47,967	47,969	+2
Blair	122	122	-	10,274	10,272	-2
Bradford	66	66	-	3,996	3,997	+1
Bucks	441	438	-3	28,979	28,946	-33
Butler	158	158	-	10,569	10,551	-18
Cambria	155	156	+1	20,739	20,782	+43
Cameron	14	14	-	1,877	1,877	-
Carbon	100	100	-	7,672	7,679	+7
Centre	82	82	-	4,305	4,306	+1
Chester	245	244	-1	24,063	24,102	+39
Clarion	63	63	-	2,205	2,205	-
Clearfield	118	117	-1	5,659	5,667	+8
Clinton	62	62	-	5,890	5,890	-
Columbia	109	110	+1	9,122	9,223	+101
Crawford	124	123	-1	7,811	7,817	+6
Cumberland	138	138	-	9,519	9,510	-9
Dauphin	241	243	+2	24,433	24,500	+67
Delaware	330	330	-	46,635	46,365	-270
Elk	64	64	-	7,114	7,174	+60
Erie	432	430	-2	35,234	35,046	-188
Fayette	165	164	-1	7,354	7,404	+50
Forest	11	11	-	655	655	-
Franklin	130	129	-1	9,397	9,396	-1
Fulton	19	19	-	99	99	-
Greene	29	29	-	561	561	-
Huntingdon	50	50	-	2,888	2,888	-
Indiana	74	74	-	3,505	3,506	+1
Jefferson	75	76	+1	4,627	4,647	+20
Juniata	38	38	-	1,036	1,080	+44
Lackawanna	458	459	+1	28,183	28,289	+106
Lancaster	588	589	+1	44,236	44,255	+19
Lawrence	141	140	-1	12,556	12,549	-7
Lebanon	178	179	+1	13,439	13,451	+12
Lehigh	424	423	-1	33,994	33,817	-177
Luzerne	608	607	-1	37,734	37,675	-59
Lycoming	195	195	-	16,896	16,895	-1
McKean	104	104	-	6,696	6,696	-
Mercer	139	139	-	19,370	19,370	-
Mifflin	55	55	-	6,184	6,184	-
Monroe	90	90	-	4,083	4,087	+4
Montgomery	790	787	-3	62,458	62,557	+99
Montour	13	13	-	2,137	2,137	-
Northampton	388	391	+3	45,550	45,935	+385
Northumberland	175	174	-1	13,366	13,255	-111
Perry	43	43	-	746	776	+30
Philadelphia	4,236	4,236	-	277,391	277,391	-
Pike	20	20	-	83	83	-
Potter	36	36	-	982	982	-
Schuylkill	287	286	-1	19,161	19,056	-105
Snyder	51	50	-1	1,975	1,972	-3
Somerset	113	113	-	3,126	3,143	+17
Sullivan	17	17	-	579	579	-
Susquehanna	46	45	-1	2,266	2,332	+66
Tioga	46	46	-	2,919	2,919	-
Union	35	35	-	1,666	1,666	-
Venango	87	87	-	7,035	7,039	+4
Warren	83	83	-	5,123	5,123	-
Washington	208	206	-2	18,664	18,668	+4
Wayne	63	63	-	2,369	2,369	-
Westmoreland	403	408	+5	38,218	38,349	+131
Wyoming	37	37	-	963	963	-
York	568	568	-	42,559	42,557	-2

TABLE C: NUMBER OF MUNICIPALITIES BY SIZE OF MUNICIPALITY IN PENNSYLVANIA,  
BY COUNTY: 1958

(Size of municipality is determined by number of persons employed)

County	Total number of municipalities	Number of municipalities with manufacturing establishments	Number of municipalities by size of municipality in terms of employment							Number of unclassifiable rural delivery areas
			0-19 employees	20-99 employees	100-499 employees	500-999 employees	1,000- 4,999 employ- ees	5,000- 9,999 employees	10,000- and over employees	
Total	2,573	1,738	556	408	411	140	186	22	15	102
Adams	31	22	3	6	8	4	1	-	-	2
Allegheny	129	105	16	29	23	8	24	3	2	6
Armstrong	45	25	11	6	6	-	2	-	-	1
Beaver	54	33	9	5	7	3	6	2	1	2
Bedford	38	20	13	3	3	1	-	-	-	2
Berks	77	59	16	14	15	5	8	-	1	6
Blair	24	18	2	7	5	2	1	1	-	2
Bradford	52	23	10	6	4	2	1	-	-	1
Bucks	54	50	10	11	19	1	8	1	-	7
Butler	56	36	17	8	6	4	-	1	-	2
Cambria	63	38	21	10	6	-	-	-	1	3
Cameron	7	3	1	1	-	-	1	-	-	-
Carbon	24	17	4	2	7	1	3	-	-	1
Centre	36	25	10	6	7	1	1	-	-	1
Chester	73	50	16	10	14	4	5	1	-	5
Clarion	35	23	11	6	5	1	-	-	-	1
Clearfield	51	32	14	6	8	3	1	-	-	1
Clinton	29	17	11	2	1	1	2	-	-	2
Columbia	33	20	9	3	5	1	2	-	-	3
Crawford	51	32	20	2	7	-	3	-	-	6
Cumberland	34	19	3	4	7	3	2	-	-	2
Dauphin	40	27	6	7	7	3	2	2	-	-
Delaware	49	42	8	10	11	4	6	2	1	-
Elk	13	10	4	-	3	-	3	-	-	-
Erie	40	31	16	5	3	2	4	-	1	2
Fayette	40	33	8	13	8	2	2	-	-	3
Forest	9	6	1	3	2	-	-	-	-	-
Franklin	22	18	7	4	4	1	2	-	-	1
Fulton	12	8	7	1	-	-	-	-	-	-
Greene	26	11	9	-	2	-	-	-	-	-
Huntingdon	48	23	17	4	-	-	2	-	-	1
Indiana	39	24	11	5	6	1	1	-	-	-
Jefferson	34	22	10	6	4	-	2	-	-	2
Juniata	17	12	3	5	4	-	-	-	-	-
Lackawanna	40	31	8	5	9	4	4	-	1	-
Lancaster	61	54	6	17	13	9	8	-	1	-
Lawrence	27	21	8	4	6	1	1	1	-	1
Lebanon	27	21	6	5	6	1	2	1	-	1
Lehigh	25	20	2	4	6	4	3	-	1	1
Luzerne	73	53	5	15	17	9	6	-	1	3
Lycoming	52	26	14	5	3	-	3	-	1	2
McKean	22	16	3	4	6	2	1	-	-	-
Mercer	48	28	12	7	3	-	5	1	-	2
Mifflin	15	11	2	4	2	1	2	-	-	-
Monroe	20	16	5	6	2	1	2	-	-	-
Montgomery	62	59	9	6	15	13	14	2	-	3
Montour	11	4	3	-	-	-	1	-	-	-
Northampton	38	34	1	6	15	5	5	1	1	3
Northumberland	37	23	4	6	7	1	5	-	-	2
Perry	30	15	7	6	2	-	-	-	-	-
Philadelphia	1	1	-	-	-	-	-	-	1	-
Pike	13	10	8	2	-	-	-	-	-	-
Potter	30	11	5	4	2	-	-	-	-	-
Schuylkill	68	47	8	10	15	9	5	-	-	3
Snyder	20	14	1	7	5	1	-	-	-	-
Somerset	47	31	14	9	7	1	-	-	-	1
Sullivan	13	8	1	5	2	-	-	-	-	-
Susquehanna	41	15	5	4	4	2	-	-	-	-
Tioga	40	17	7	5	3	2	-	-	-	-
Union	14	9	5	-	3	1	-	-	-	-
Venango	30	18	9	2	3	2	2	-	-	2
Warren	30	19	7	9	1	1	1	-	-	-
Washington	67	38	17	8	6	1	6	-	-	5
Wayne	28	16	10	3	2	-	1	-	-	-
Westmoreland	63	54	18	8	13	5	8	2	-	5
Wyoming	23	11	4	4	3	-	-	-	-	-
York	72	53	8	18	13	6	6	1	1	3

TABLE D: NUMBER OF MANUFACTURING ESTABLISHMENTS IN MUNICIPALITIES WITH  
MANUFACTURING INDUSTRY BY SIZE OF MUNICIPALITY IN TERMS OF  
EMPLOYMENT, BY COUNTY: 1958

(Size of municipality is determined by number of persons employed)

County	Number of establishments in municipalities with manufacturing industry by size of municipality in terms of employment								Number of establishments in unclassifiable rural delivery areas
	Total manufacturing establishments	0-19 employees	20-99 employees	100-499 employees	500-999 employees	1,000- 4,999 employees	5,000- 9,999 employees	10,000- and over employees	
Total	16,989	833	1,184	2,207	1,476	3,139	815	7,117	218
Adams	97	5	9	36	27	16	-	-	4
Allegheny	1,592	33	94	145	77	240	57	940	6
Armstrong	82	20	15	33	-	11	-	-	3
Beaver	194	14	11	21	42	65	22	14	5
Bedford	46	21	5	8	8	-	-	-	4
Berks	602	27	30	84	50	125	-	270	16
Blair	122	2	14	25	6	12	59	-	4
Bradford	66	12	14	22	14	3	-	-	1
Bucks	438	17	49	124	26	202	6	-	14
Butler	158	24	33	23	25	-	51	-	2
Cambria	156	26	22	33	-	-	-	70	5
Cameron	14	1	3	-	-	10	-	-	-
Carbon	100	6	4	35	21	33	-	-	1
Centre	82	15	13	34	10	8	-	-	2
Chester	244	20	18	58	37	85	16	-	10
Clarion	63	18	21	13	10	-	-	-	1
Clearfield	117	22	18	24	34	18	-	-	1
Clinton	62	12	10	3	5	30	-	-	2
Columbia	110	10	4	20	9	58	-	-	9
Crawford	123	29	5	33	-	44	-	-	12
Cumberland	138	5	8	43	39	40	-	-	3
Dauphin	243	8	18	31	33	25	128	-	-
Delaware	330	15	35	71	71	55	8	75	-
Elk	64	6	-	13	-	45	-	-	-
Erie	430	24	11	16	28	47	-	301	3
Fayette	164	12	47	24	37	38	-	-	6
Forest	11	1	4	6	-	-	-	-	-
Franklin	129	12	12	23	8	68	-	-	6
Fulton	19	17	2	-	-	-	-	-	-
Greene	29	12	-	17	-	-	-	-	-
Huntingdon	50	22	5	-	-	22	-	-	1
Indiana	74	17	8	24	3	22	-	-	-
Jefferson	76	14	15	30	-	14	-	-	3
Juniata	38	3	13	22	-	-	-	-	-
Lackawanna	459	13	15	59	34	81	-	257	-
Lancaster	589	10	70	89	85	166	-	169	-
Lawrence	142	14	18	22	7	26	49	-	6
Lebanon	179	8	20	28	16	22	81	-	4
Lehigh	404	2	14	36	30	60	-	257	5
Luzerne	607	5	40	106	89	196	-	167	4
Lycoming	195	19	15	23	-	32	-	101	5
McKean	104	3	12	26	23	40	-	-	-
Mercer	139	13	35	8	-	56	24	-	3
Mifflin	55	5	13	8	7	22	-	-	-
Monroe	90	5	20	8	1	56	-	-	-
Montgomery	787	13	16	139	215	288	112	-	4
Montour	13	4	-	-	-	9	-	-	-
Northampton	410	2	10	75	48	110	76	82	7
Northumberland	174	6	18	39	3	104	-	-	4
Perry	43	11	21	11	-	-	-	-	-
Philadelphia	4,236	-	-	-	-	-	-	4,236	-
Pike	20	15	5	-	-	-	-	-	-
Potter	36	7	9	20	-	-	-	-	-
Schuylkill	286	9	22	63	91	95	-	-	6
Snyder	50	1	11	24	14	-	-	-	-
Somerset	113	25	32	53	2	-	-	-	1
Sullivan	17	1	10	6	-	-	-	-	-
Susquehanna	45	6	7	18	14	-	-	-	-
Tioga	46	8	12	12	14	-	-	-	-
Union	35	11	-	12	12	-	-	-	-
Venango	87	12	8	6	17	39	-	-	5
Warren	83	13	27	3	3	37	-	-	-
Washington	206	26	27	36	5	102	-	-	10
Wayne	63	23	11	12	-	17	-	-	-
Westmoreland	408	27	30	86	60	142	44	-	19
Wyoming	37	5	12	20	-	-	-	-	-
York	568	9	54	65	66	103	82	178	11

TABLE E: NUMBER OF EMPLOYEES IN MUNICIPALITIES WITH MANUFACTURING INDUSTRY  
BY SIZE OF MUNICIPALITY IN TERMS OF EMPLOYMENT, BY COUNTY: 1958

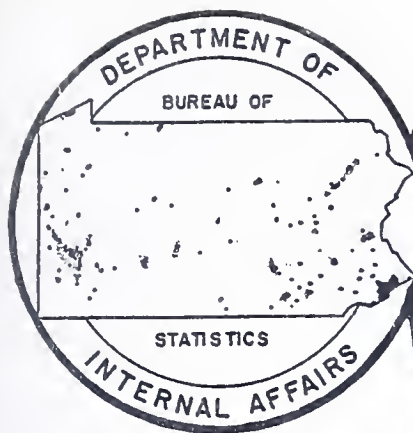
(Size of municipality is determined by number of persons employed)

County	Total number of employees	Number of employees in municipalities with manufacturing industry by size of municipality in terms of employment							Number of employees in unclassifiable rural delivery areas
		0-19 employees	20-99 employees	100-499 employees	500-999 employees	1,000- 4,999 employees	5,000- 9,999 employees	10,000 and over employees	
Total	1,345,674	3,599	21,847	97,490	100,224	404,342	152,775	562,288	3,109
Adams	6,549	11	225	1,995	2,896	1,389	-	-	33
Allegheny	169,879	147	1,744	4,790	5,792	60,165	22,083	75,115	43
Armstrong	6,170	52	262	1,518	-	4,312	-	-	26
Beaver	44,562	65	288	1,424	1,849	12,447	15,307	13,172	10
Bedford	1,224	78	85	401	585	-	-	-	75
Berks	47,969	143	768	4,402	3,743	17,149	-	21,544	220
Blair	10,272	9	313	1,564	1,140	1,483	5,714	-	49
Bradford	3,997	50	299	844	1,728	1,070	-	-	6
Bucks	28,946	53	678	3,532	901	17,357	6,373	-	52
Butler	10,551	93	494	1,444	2,826	-	5,671	-	23
Cambria	20,782	153	490	1,650	-	-	-	18,453	36
Cameron	1,877	3	26	-	-	1,848	-	-	-
Carbon	7,679	30	95	2,055	712	4,772	-	-	15
Centre	4,306	84	462	1,150	971	1,596	-	-	43
Chester	24,102	98	570	3,384	2,698	11,878	5,314	-	160
Clarion	2,205	60	365	883	883	-	-	-	14
Clearfield	5,667	96	383	1,343	2,367	1,202	-	-	276
Clinton	5,890	67	96	476	815	4,422	-	-	14
Columbia	9,223	39	117	1,260	737	6,998	-	-	72
Crawford	7,817	137	146	1,311	-	6,056	-	-	167
Cumberland	9,510	20	180	1,797	2,309	5,142	-	-	62
Dauphin	24,500	34	402	1,291	2,010	5,922	14,841	-	-
Delaware	46,365	75	429	2,660	2,809	13,278	15,486	11,628	-
Elk	7,174	13	-	484	-	6,677	-	-	-
Erie	35,046	105	187	653	1,711	6,778	-	25,583	29
Fayette	7,404	52	672	1,544	1,532	3,573	-	-	31
Forest	655	3	157	495	-	-	-	-	-
Franklin	9,396	49	232	842	927	7,279	-	-	67
Fulton	99	48	51	-	-	-	-	-	-
Greene	561	41	-	520	-	-	-	-	-
Huntingdon	2,888	109	111	-	-	2,666	-	-	2
Indiana	3,506	48	275	1,626	530	1,027	-	-	-
Jefferson	4,647	51	338	1,535	-	2,701	-	-	22
Juniata	1,080	11	323	746	-	-	-	-	-
Lackawanna	28,289	38	299	2,498	2,211	5,547	-	17,696	-
Lancaster	44,255	28	1,062	2,502	6,740	15,025	-	18,898	-
Lawrence	12,606	68	198	1,513	821	4,066	5,871	-	69
Lebanon	13,451	62	280	1,547	950	2,075	8,480	-	57
Lehigh	31,780	16	159	1,703	2,760	4,115	-	22,941	86
Luzerne	37,675	20	696	4,516	6,475	13,967	-	11,954	47
Lycoming	16,895	75	236	899	-	5,308	-	10,357	20
McKean	6,696	11	240	1,316	1,390	3,739	-	-	-
Mercer	19,370	41	381	931	-	10,643	7,372	-	2
Mifflin	6,184	18	187	402	508	5,069	-	-	-
Monroe	4,087	15	411	262	531	2,868	-	-	-
Montgomery	62,557	102	481	4,552	9,867	30,663	16,845	-	47
Montour	2,137	13	-	-	-	2,124	-	-	-
Northampton	47,972	15	293	3,686	3,048	9,816	7,339	23,721	54
Northumberland	13,255	18	387	1,473	909	10,435	-	-	33
Perry	776	37	373	366	-	-	-	-	-
Philadelphia	277,391	-	-	-	-	-	-	277,391	-
Pike	83	36	47	-	-	-	-	-	-
Potter	982	21	149	812	-	-	-	-	-
Schuylkill	19,056	71	555	3,116	5,886	9,223	-	-	205
Snyder	1,972	10	412	971	579	-	-	-	-
Somerset	3,143	103	471	1,940	599	-	-	-	30
Sullivan	579	14	226	339	-	-	-	-	-
Susquehanna	2,332	38	200	776	1,318	-	-	-	-
Tioga	2,919	53	176	1,046	1,644	-	-	-	-
Union	1,666	31	-	643	992	-	-	-	-
Venango	7,039	34	126	548	1,471	4,848	-	-	12
Warren	5,123	87	478	226	863	3,469	-	-	-
Washington	18,668	125	309	1,026	821	16,117	-	-	270
Wayne	2,369	107	157	417	-	1,688	-	-	-
Westmoreland	38,349	119	454	3,303	3,228	20,026	10,985	-	234
Wyoming	963	21	215	727	-	-	-	-	-
York	42,557	25	926	3,815	4,142	14,324	5,094	13,835	396









# MINERAL STATISTICS FOR PENNSYLVANIA

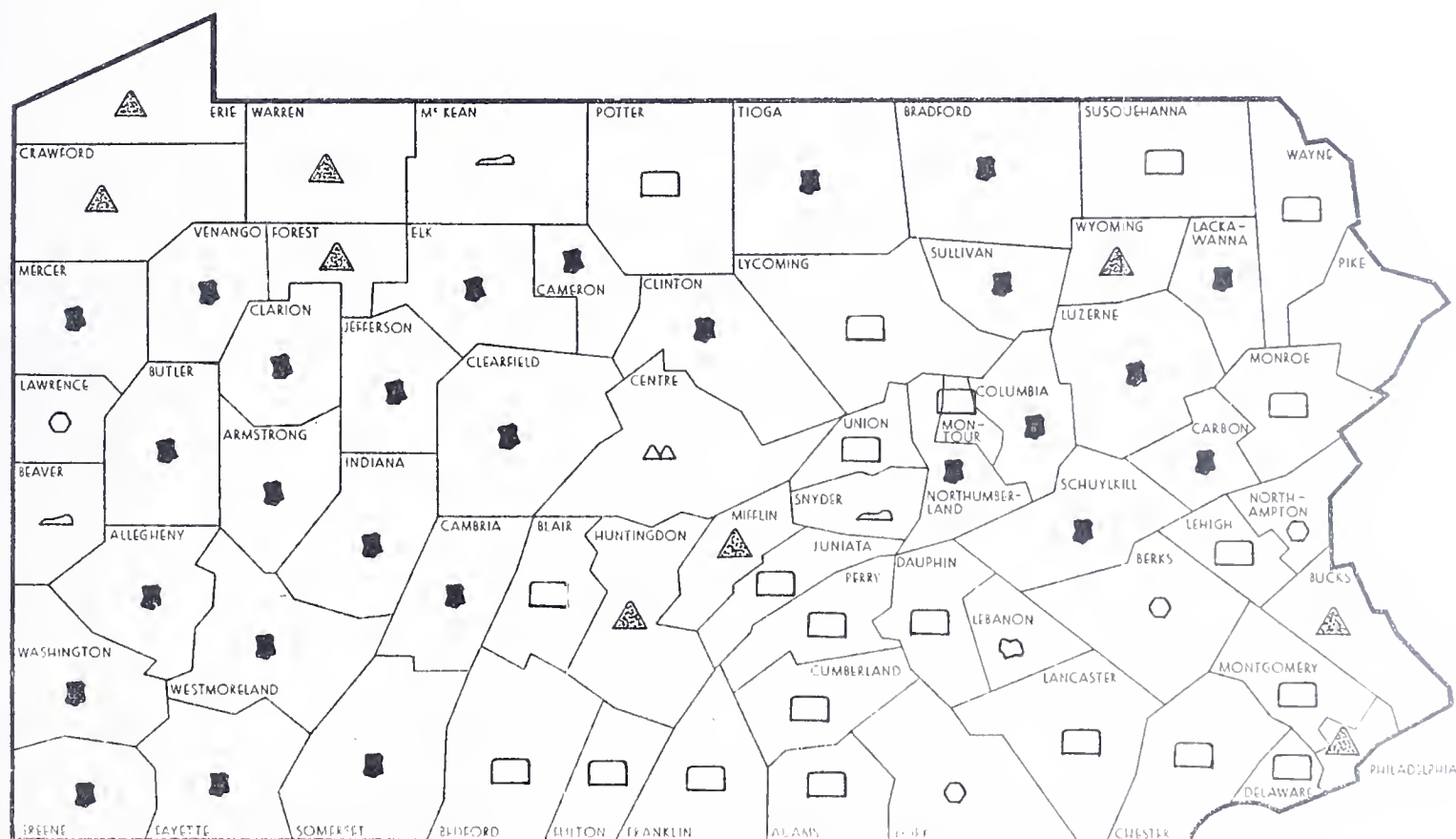
DEPARTMENT OF  
INTERNAL AFFAIRS  
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BUREAU OF STATISTICS  
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SEPTEMBER 1960

SPECIAL RELEASE S-7

## LEADING MINERAL PRODUCTS BY COUNTY: 1958



■ COAL    ▲ SAND AND GRAVEL    □ STONE    ○ CEMENT    ~ CLAYS    ⚓ LIME    ⊠ IRON ORE

# MINERAL STATISTICS FOR PENNSYLVANIA

## CONTENTS

	<u>Page</u>
A. Introduction . . . . .	1
B. Agencies Collecting Statistics on the Mineral Industries in Pennsylvania	
U. S. Bureau of Mines . . . . .	1
U. S. Bureau of the Census . . . . .	1
Bureau of Statistics . . . . .	1
Department of Mines and Mineral Industries . . . . .	1
Bureau of Employment Security . . . . .	1
C. Comparisons Among Statistical Series . . . . .	1
D. Other Sources of Data . . . . .	3
Table 1: Value of Mineral Production in Pennsylvania by County: 1957 and 1958 . . . . .	4
Table 2: Mineral Production in Pennsylvania: 1956, 1957, and 1958 . . . .	5
Table 3: General Statistics for the Anthracite and Bituminous Coal Industries in Pennsylvania, by Industry and Division: 1958 .	5
Table 4: General Statistics for Mineral and Associated Manufacturing Establishments in Pennsylvania by Industry Group and Industry: 1958 . . . . .	6
Table 5: Shipments of Crude Petroleum Produced in Pennsylvania and Number of Wells Connected, by County: 1957, 1958, and 1959 . . . . .	6
Table 6: Deep Mined, Stripping, and Bank Anthracite Production in Pennsylvania, by County: 1959. . . . .	7
Table 7: Auger, Deep, and Strip Mined Bituminous Coal Production in Pennsylvania, by County: 1959. . . . .	7
Table 8: Employment for the Major Mineral Industries in Pennsylvania, by County: First Quarter, 1959 . . . . .	8
Table 9: Wages for the Major Mineral Industries in Pennsylvania, by County: First Quarter, 1959. . . . .	9



## MINERAL STATISTICS FOR PENNSYLVANIA

### A. INTRODUCTION:

The purpose of this report is to present statistics for the mineral industries in Pennsylvania compiled from each of five major data collection sources, and to evaluate some of the differences among these statistics.

### B. AGENCIES COLLECTING STATISTICS ON THE MINERAL INDUSTRIES IN PENNSYLVANIA:

The state and federal agencies which collect and publish statistics on Pennsylvania's mineral industries, together with brief descriptions of their statistical activities, are as follows:

1. U. S. BUREAU OF MINES. The Bureau of Mines in the U. S. Department of Interior conducts an annual canvass of all mineral operations in Pennsylvania including operations classified as manufacturing by the Standard Industrial Classification (see table 2). Information on commodity production for metal, non-metallic, and bituminous coal production is analyzed and tabulated by the Pittsburgh office; additional information collected on employment and accidents is tabulated by the Branch of Accident Analysis in Washington, D. C. Similar data for the anthracite industry are collected by the Bureau of Mines office located in Schuylkill Haven.

Statistics on oil and gas are collected by the Branch of Petroleum Economics, Division of Petroleum, Washington, D. C. Crude oil production represents receipts by crude oil purchasing companies (principally trunk pipelines) from producing properties and are usually reported as receipts from an entire field or group of oil fields. Statistics for natural gas are for marketed production.

Statistics for nonfuel minerals are tabulated by product rather than by industry and include the value of production of certain manufactured products such as lime and cement. Summary statistics for 1956, 1957, and 1958 are shown in table 2. Value of mineral production in Pennsylvania by county for 1957 and 1958 is shown in table 1.

Statistics collected by the Bureau of Mines are published in bulletin form and in a three volume series, Minerals Yearbook.

2. U. S. BUREAU OF THE CENSUS. The Bureau of the Census in the U. S. Department of Commerce conducts periodic censuses of mineral industries in the United States. The results of the 1954 Census of Mineral Industries are available in two volumes: Volume I Summary and Industry Statistics, and Volume II Area Statistics. The individual bulletin for Pennsylvania, which may be obtained at a cost of 20 cents from the U. S. Government Printing Office, Washington 25, D. C., is Bulletin MI-137. Preliminary data for the 1958 Census of Mineral Industries are available in releases titled "Industry and Product Reports" published by the Bureau of the Census. Titles of these releases, which cost 10 cents apiece or \$4.00 for the entire set, can be obtained from the U. S. Bureau of the Census, Washington 25, D. C., and from the U. S. Department of Commerce field office.

3. BUREAU OF STATISTICS. The Bureau of Statistics in the Pennsylvania Department of Internal Affairs conducts an annual industrial census for Pennsylvania.

The scope of coverage for mineral industries in the 1958 Industrial Census excluded anthracite and bituminous coal producers, but included producers of minerals other than fuels. Statistics for the nonfuel mineral industries and for the stone, clay, and glass products industries are shown in table 1. Statistics on crude oil production as reported by petroleum pipeline producers are shown in table 8 of this release. Definitions of terms and additional explanatory notes are given in Release M-1, "Statistics for Manufacturing Industries in Pennsylvania."

4. DEPARTMENT OF MINES AND MINERAL INDUSTRIES. The Pennsylvania Department of Mines and Mineral Industries collects statistics on employment, production, and injuries for all anthracite and bituminous coal mining operations in the state. These statistics are collected by the Department's mine inspectors and are published in three releases -- the annual report for the Bituminous Coal Division, the annual report for the Anthracite Division, and the monthly "Safety Sentinel Reports."

The annual reports present individual company data for production by destination and means of transportation, explosives used, days worked, number of employees, and accidents. Summary tables are also included, two of which are shown in tables 4 and 5.

The concept of employment used by the Department of Mines is the total number of persons on the payroll during the year. Unlike the statistics on employment published by the BES and the Department of Internal Affairs, self-employed persons working as individual proprietors or in partnerships are included in the employment figures published by the Department of Mines. Some indication of the magnitude of self-employment is revealed by the number of persons working in anthracite operations with fewer than 5 persons. In 1958 there were 2,371 such persons.

The monthly "Safety Sentinel Reports" contain statistics on shipments of anthracite and bituminous coal by size, by destination of shipments, and by means of transportation (by truck or by railroad).

5. BUREAU OF EMPLOYMENT SECURITY. The Bureau of Employment Security (BES) in the Pennsylvania Department of Labor and Industry publishes a number of releases which include statistics for Pennsylvania's mineral industries.

"Pennsylvania Employment and Earnings" includes monthly estimates of employment for the anthracite industry, the bituminous coal industry, and all other mining industries in the state. In addition, average weekly earnings and hours worked, and average hourly earnings are presented for the bituminous coal industry.

"Employment and Wages of Workers Covered by the Pennsylvania Unemployment Compensation Law" is an annual BES publication in their Statistical Information Bulletin series. Monthly employment and quarterly wages (total and taxable) are presented for the following 18 mineral industries in five major industry groups:

Metal Mining (Iron ore mining; lead and zinc ore mining; gold and silver ore mining; aluminum ore mining; metal mining contract services; metal mining, not elsewhere classified).

#### Anthracite Mining

Bituminous and Other Soft Coal Mining (Bituminous coal mining, semianthracite mines, lignite mines (including peat).

Crude Petroleum and Natural Gas Production (Crude petroleum production, natural gas and natural gasoline production, oil and gas-field contract services).

Nonmetallic Mining and Quarrying (Dimension stone quarries; crushed stone quarries, other than limestone; crushed limestone quarries; sand and gravel quarries, pits, and dredges; clays, ceramic, and refractory minerals; non-metallic minerals, not elsewhere classified).

Employment and total wages for the first quarter of each year for major industry groups by county are presented in a separate Statistical Information Bulletin. Employment figures are for all full or part-time, permanent or temporary workers who earned wages in covered activities during the pay period ending nearest the 15th of March. Workers on leave with pay are counted, but workers who earned no wages during the quarter because of strikes, temporary layoffs, sickness, or unpaid vacations are not included. Wages consist of all remuneration paid by covered employers during the first quarter.

An employer who has 50 or more employees working outside the county of his principal operation is generally required to furnish a breakdown of employment and wages for other counties. If the employment is less than 50 workers, all data are classified in the county of principal operation.

Standard industrial classifications are used by the BES and the "rule of three" is used for the purpose of keeping individual company data confidential--statistics for fewer than three companies are not revealed.

Statistics on employment and total wages for the first quarter in 1959 for major industry groups and by county are shown in tables 6 and 7.

### C. COMPARISONS AMONG STATISTICAL SERIES:

All the agencies included in the comparison table on the next page, tabulated data for industries based on the Standard Industrial Classification.

## COMPARISON OF MINERAL STATISTICS BY AGENCY AND BY INDUSTRY: 1958

(All money figures in thousands of dollars)

Industry code	Industry and item	U. S. Bureau of Mines	Pennsylvania Department of Internal Affairs	U. S. Bureau of Census	Pennsylvania Department of Mines and Mineral Industries	Pennsylvania Bureau of Employment Security
1011	Metallic mining Employees		1,567			1,790
1111	Anthracite					
	Employees	-	-	22,709	24,112	23,339
	Wages and salaries	-	-	\$92,838	-	\$98,350
	Value of production	\$187,898	-	\$242,470	-	-
	Quantity	21,171,142	-	-	19,670,615	-
	Value added	-	-	\$161,274	-	-
1211	Bituminous					
	Employees	-	-	37,291	37,337	39,127
	Wages and salaries	-	-	\$184,838	-	\$198,935
	Value of production	\$373,812	-	\$457,040	-	-
	Quantity	67,770,862	-	66,432,000	65,627,585	-
	Value added	-	-	\$120,939	-	-
1400	Non-metallic mining (1)					
	Employees	-	5,310	6,110	-	6,335
	Wages and salaries	-	\$23,420	\$27,943	-	\$30,562
	Value of production	-	\$73,059	\$89,123	-	-
	Quantity	-	36,186,062	-	-	-
	Value added	-	\$51,851	\$59,934	-	-
1414	Dimension stone, n.e.c.					
	Employees	-	125	195	-	-
	Wages and salaries	-	\$400	\$545	-	-
	Value of production	-	\$1,013	\$1,374	-	-
	Quantity	-	458,113	303,000	-	-
	Value added	-	\$629	\$1,162	-	-
1422	Crushed and broken limestone					
	Employees	-	2,635	3,511	-	-
	Wages and salaries	-	\$11,902	\$16,765	-	-
	Value of production	-	\$37,104	\$52,472	-	-
	Quantity	-	20,246,961	29,665,000	-	-
	Value added	-	\$26,622	\$36,171	-	-
1429	Crushed and broken stone					
	Employees	-	741	773	-	-
	Wages and salaries	-	\$3,068	\$3,234	-	-
	Value of production	-	\$11,502	\$12,839	-	-
	Quantity	-	3,539,647	-	-	-
	Value added	-	\$7,148	\$7,917	-	-
1441	Sand and gravel					
	Employees	-	1,559	1,294	-	-
	Wages and salaries	-	\$7,142	\$5,939	-	-
	Value of production	\$19,180	\$21,189	\$18,436	-	-
	Quantity	11,825,024	11,409,501	12,897,000	-	-
	Value added	-	\$15,680	\$11,777	-	-
1453	Fire clay					
	Employees	-	250	337	-	-
	Wages and salaries	-	\$908	\$1,460	-	-
	Value of production	-	\$2,251	\$3,858	-	-
	Quantity	-	531,840	698,000	-	-
	Value added	-	\$1,772	\$2,907	-	-
1459	Clay, ceramics and refractory minerals					
	Employees	-	57	-	-	-
	Wages and salaries	-	\$229	-	-	-
	Value of production	\$17,051	\$912	\$144	-	-
	Quantity	3,317,600	193,772	1,764,000	-	-
	Value added	-	\$596	-	-	-

(1) Figures include totals of all non-metallic industries except fuels.

Source: U. S. Bureau of Mines, table 2.

Pennsylvania Department of Internal Affairs, table 4 and unpublished data.

U. S. Bureau of the Census, 1958 Census of Mineral Industries, Industry and Product Report.

Pennsylvania Department of Mining and Mineral Industries, tables 6 and 7.

Pennsylvania Bureau of Employment Security, Current Trends in Employment and Wages in Pennsylvania Industries, 1958.

In anthracite mining the difference in tonnage between the U. S. Bureau of Mines and the Pennsylvania Department of Mines and Mineral Industries is due to the collection of data for river dredged coal by the U. S. Bureau of Mines. The Pennsylvania Department of Mines and Mineral Industries does not collect these data.

The employment data differences for anthracite mining are due mainly to scope and method of coverage. The U. S. Bureau of the Census figure is preliminary and does not include working proprietors. This figure will be increased to include these proprietors when the final report for anthracite is published.

The differences in nonmetallic mining are due primarily to methods of reporting, interpretation of classification, and completeness of coverage. The U. S. Bureau of the Census, in most instances, receives separate reports for joint mining and manufacturing companies. The Pennsylvania Department of Internal Affairs does not receive separate reports in most cases, and since the manufacturing part of the operation is generally greater, these companies are included in the manufacturing census.

The U. S. Bureau of the Census quantity figures include minerals shipped by manufacturers. Figures released by the Department of Internal Affairs and U. S. Bureau of Mines contain only minerals shipped from quarries.

#### D. OTHER SOURCES OF DATA:

The Bureau of Research and Statistics in the Department of Labor and Industry publishes statistics on industrial injuries reported to the Workmen's Compensation Bureau.

The Anthracite Institute, 237 Old River Road, Wilkes-Barre, publishes weekly reports on the number of car loadings of anthracite.

The Anthracite Committee, State Street Building, Harrisburg, publishes a monthly release on the production of anthracite by size.



County	Value of production (1)		Minerals produced in 1958 in order of value
	1957	1958	
Total	\$1,077,157	\$881,181	
Adams	(2)	(2)	Stone, sericite schist, clays
Allegheny	59,810	45,621	Coal, cement, clays, sand and gravel, stone
Armstrong	17,486	(2)	Coal, sand and gravel, clays, lime, stone
Beaver	(2)	(2)	Clays, coal, sand and gravel
Bedford	1,661	1,620	Stone, coal, lime, sand and gravel
Berks	9,605	9,412	Cement, stone, clays, crude iron oxide pigments, sand and gravel, gem stone
Blair	2,110	1,982	Stone, coal, clays, sand and gravel, lime
Bradford	(2)	(2)	Coal, sand and gravel
Bucks	(2)	(2)	Sand and gravel, stone, clays, gem stone
Butler	17,027	13,648	Coal, cement, lime, stone, sand and gravel, clays
Cambria	71,430	53,454	Coal, clays, crude iron oxide pigments
Cameron	(2)	(2)	Coal
Carbon	10,024	(2)	Coal, stone, sand and gravel, gem stone
Centre	15,044	(2)	Lime, coal, stone, clays
Chester	4,549	5,664	Stone, lime, clays, gem stone
Clarion	12,182	10,658	Coal, clays
Clearfield	(2)	(2)	Coal, clays, sand and gravel
Clinton	2,650	2,530	Coal, stone, clays
Columbia	(2)	(2)	Coal, sand and gravel, clays
Crawford	138	154	Sand and gravel
Cumberland	462	(2)	Stone, sand and gravel, clays, gem stone
Dauphin	4,199	3,645	Stone, coal, clays, sand and gravel, lime
Delaware	(2)	(2)	Stone, gem stone.
Elk	1,596	1,654	Coal, clays, sand and gravel, crude iron oxide pigment
Erie	(2)	(2)	Sand and gravel, peat
Fayette	40,836	19,647	Coal, stone, clays, sand and gravel
Forest	(2)	(2)	Sand and gravel
Franklin	926	1,183	Stone, sand and gravel, lime
Fulton	(2)	(2)	Stone, sand and gravel, lime
Greene	80,300	62,201	Coal
Huntingdon	4,334	5,065	Sand and gravel, stone, coal, clays
Indiana	(2)	(2)	Coal, clays
Jefferson	(2)	(2)	Coal, clays
Juniata	(2)	(2)	Stone
Lackawanna	26,503	19,938	Coal
Lancaster	5,370	(2)	Stone, coal, sand and gravel, clays, lime, gem stone
Lawrence	22,084	(2)	Cement, coal, stone, clays, sand and gravel, peat
Lebanon	20,039	18,968	Iron ore, copper, lime stone, pyrite, gold, coal, silver, gem stone.
Lehigh	(2)	(2)	Cement, zinc, stone (slate), gem stone
Luzerne	(2)	68,949	Coal, sand and gravel, stone, peat, clays, gem stone
Lycoming	1,708	1,555	Stone (slate), sand and gravel, coal, tripoli
McKean	615	455	Clays, coal, sand and gravel
Mercer	2,607	3,101	Coal, sand and gravel, stone, peat
Mifflin	(2)	(2)	Sand and gravel, stone, lime
Monroe	(2)	(2)	Stone, sand and gravel, gem stone
Montgomery	13,587	12,620	Stone, cement, lime, clays, sand and gravel, gem stone
Montour	(2)	(2)	Stone
Northampton	(2)	(2)	Cement, stone (slate), sand and gravel, coal, gem stone
Northumberland	(2)	(2)	Coal, clays, stone, sand and gravel, lime
Perry	(2)	(2)	Stone, gem stone
Philadelphia	415	400	Sand and gravel
Pike	-	-	-
Potter	142	(2)	Stone
Schuylkill	74,041	(2)	Coal, stone, sand and gravel, clays, gem stone
Snyder	382	478	Clays, coal, stone, lime
Somerset	21,798	(2)	Coal, clays, stone, sand and gravel
Sullivan	(2)	89	Coal
Susquehanna	427	(2)	Stone, coal, sand and gravel
Tioga	(2)	1,466	Coal
Union	413	356	Stone
Venango	(2)	(2)	Coal, sand and gravel
Warren	(2)	(2)	Sand and gravel
Washington	91,827	69,837	Coal, clays, sand and gravel
Wayne	460	(2)	Stone, coal, sand and gravel
Westmoreland	(2)	21,053	Coal, stone, clays
Wyoming	(2)	(2)	Sand and gravel, stone
York	14,563	14,903	Cement, stone (slate), lime, sand and gravel, clays, mica, gem stone
Undistributed	421,807	408,872	

(1) Excludes value of production for LP-gases, natural gasoline, petroleum, and some gem stone unspecified by counties, but value is included with "Undistributed." Also excludes values of clays and stone used in manufacturing lime and cement. Figures for 1957 are revised.

(2) Figures withheld to avoid disclosing individual company confidential data.

Source: U. S. Department of Interior, Bureau of Mines.



TABLE 2: MINERAL PRODUCTION IN PENNSYLVANIA: 1956, 1957, AND 1958

(Production is measured by nine shipments, sales or marketable production, including consumption by producers.)

Mineral and industry group	Quantity (in short tons unless otherwise stated)			Values (in thousands of dollars)		
	1956	1957	1958	1956	1957	1958
Mineral industries, total				\$921,297	\$922,450	\$740,760
Anthracite	28,900,200	25,338,321	21,171,142	236,785	227,754	187,898
Bituminous coal	90,286,692	85,365,254	67,770,862	479,437	492,539	373,812
Crude petroleum and natural gas						
Crude petroleum-thousand 42 gallon barrels	8,230	8,179	6,678	35,718	38,687	27,380
Natural gas-million cubic feet	104,508	101,801	95,869	33,652	31,660	27,131
Natural gasoline-thousand gallons	4,081	3,106	1,608	251	192	107
LP gases thousand gallons	1,127	1,211	1,363	99	106	123
Nonmetallic minerals, except fuels						
Clays (excluding kaolin)	4,412,550	4,073,666	3,317,600	23,782	22,012	17,051
Sand and gravel	14,047,068	12,405,654	11,825,024	21,321	19,570	19,180
Stone	44,912,987	43,257,558	40,049,162	73,831	73,090	69,694
Tripoli	1,030	(1)	(1)	7	(1)	(1)
Peat	20,498	26,086	23,623	214	236	203
All other(1)	-	-	-	16,200	16,604	18,181
Manufacturing industries						
Cement, portland - 376 lb. barrels	49,526,640	42,519,334	40,147,578	153,506	140,100	135,118
Cement, masonry -376 lb. barrels	2,437,168	2,161,109	1,967,517	8,882	8,030	7,281
Iron oxide pigment (crude)	600	998	1,154	7	9	10
Lime	1,443,430	1,298,401	1,003,058	18,282	18,406	12,457
Slate	153,824	139,283	(2)	4,194	4,005	(2)
Sulfur (recoverable elemental sulfur) long tons	11,350	(1)	(1)	386	(1)	(1)

(1) Products whose value is undisclosed: Copper, cobalt, gold, iron ore, zinc, kaolin, mica, oystershell (1956), pyrites, sericite schist, silver, and stone (dimension basalt 1956). The quantity of cobalt production was 533,329 short pounds in 1956, 599,122 short pounds in 1957, and 564,382 pounds in 1958.

(2) Included with stone.

Source: Statistics taken from preprint copy of Minerals Yearbook, 1958, published by the U.S. Department of Interior, Bureau of Mines.

TABLE 3: GENERAL STATISTICS FOR THE ANTHRACITE AND BITUMINOUS COAL INDUSTRIES  
IN PENNSYLVANIA, BY INDUSTRY AND DIVISION: 1958  
(All money figures in thousands of dollars)

Industry	Number of establishments	Number of employees	Wages and salaries	Value added in mining or mining services	Cost of coal received, supplies, purchased energy, and contract work	Cost of purchased machinery installed	Value of shipments and receipts for services	Capital expenditures
Bituminous coal	1,309	36,676	\$182,018	\$288,293	\$161,025	\$30,803	\$448,923	\$31,198
Bituminous coal mining services total	62	615	2,820	5,759	2,539	1,354	8,117	1,535
Bituminous coal stripping and auger mining services	57	450	2,041	4,534	1,942	1,189	6,295	1,370
Bituminous coal mining services, n.e.c.	5	165	779	1,225	597	165	1,822	165
Anthracite coal	1,167	19,649	79,098	138,735	156,857	6,282	289,131	12,743
Anthracite contract services, total	86	3,107	13,946	22,805	12,441	3,368	34,784	3,831
Anthracite stripping services	80	3,060	13,740	22,539	12,384	3,269	34,461	3,731
Anthracite mining services, except stripping	6	47	206	266	57	99	323	100

Source: Preliminary releases (11 B-1, 11 B-2, 12A-1, and 12A-2) of the 1958 Census of Mineral Industries taken by the U.S. Department of Commerce, Bureau of the Census.

TABLE 4: GENERAL STATISTICS FOR MINERAL AND ASSOCIATED MANUFACTURING ESTABLISHMENTS  
IN PENNSYLVANIA BY INDUSTRY GROUP AND INDUSTRY: 1958

(See Tables 2, 3, 6, and 7 for statistics on anthracite and bituminous coal mining industries.)

(All money figures in thousands of dollars)

Industry code	Industry	Number of plants	Capital expenditures during 1958	Number of employees	Total wages and salaries	Value of production and related activities	Value added by manufacturing or mining	Coverage ratio (a)	Specialization ratio (b)
32	Total stone, clay, and glass products	951	\$39,101	60,707	\$278,301	\$828,187	\$530,126	95.4	94.1
3211	Flat glass	11	1,530	4,117	19,816	58,172	37,697	95.2	89.6
3221	Glass containers	15	5,464	8,563	37,141	114,010	67,146	99.9	98.6
3229	Pressed and blown glassware, n.e.c.	29	1,472	7,274	30,337	77,616	56,954	97.2	97.0
3231	Products of purchased glass	72	925	4,181	20,834	69,388	40,776	90.5	98.7
3241	Cement, hydraulic	24	11,998	6,572	35,788	132,874	89,979	99.2	95.8
3251	Brick and hollow tile	52	1,185	2,979	13,481	29,847	21,817	96.7	99.5
3253	Floor and wall tile	7	1,106	1,327	6,331	18,474	13,852	97.1	100.0
3255	Clay refractories	42	1,763	3,394	16,551	38,491	24,422	99.0	95.1
3259	Structural clay products, n.e.c.	14	159	1,197	4,383	9,114	6,948	98.8	97.8
3262	Vitreous china food utensils (1)	9	333	3,199	13,302	25,521	20,499	96.9	100.0
3264	Porcelain electrical supplies	3	1,241	750	3,128	6,501	4,736	100.0	85.9
3269	Pottery products, n.e.c.	20	97	680	2,622	5,590	4,367	99.2	96.9
3271	Concrete brick and block	189	2,449	2,341	8,483	33,562	16,563	87.4	89.1
3272	All other concrete products	148	1,693	1,737	7,170	20,879	13,056	95.0	87.2
3273	Ready-mixed concrete	49	1,327	976	3,815	19,105	7,634	85.8	82.3
3274	Lime (2)	30	1,852	1,489	7,071	27,326	15,753	88.0	91.5
3281	Cut-stone and stone products	79	267	1,288	4,804	11,274	7,492	96.4	92.9
3291	Abrasive products	26	950	1,415	7,541	19,232	12,969	99.0	94.6
3292	Asbestos products	8	884	1,505	7,886	18,556	11,536	82.0	86.4
3293	Gaskets and asbestos insulation	19	674	1,245	6,656	18,383	11,647	74.8	73.3
3295	Minerals-ground or treated	57	920	1,479	7,152	27,341	14,510	90.9	80.1
3297	Nonclay refractories	26	737	2,524	12,135	41,269	25,831	95.0	98.2
3299	Statuary and art goods (3)	22	74	475	1,872	5,662	3,944	99.0	84.0
14	Total mining and quarrying of non-metallic minerals, except fuels	245	7,399	5,367	23,650	73,970	52,449	97.5	97.8
1414	Dimension slate (4)	3	3	10	13	41	32	100.0	100.0
1417	Dimension sandstone	10	27	59	190	614	322	98.1	100.0
1419	Dimension stone, n.e.c.	7	11	56	197	358	275	95.7	100.0
1422	Crushed and broken limestone (5)	81	4,775	2,635	11,902	37,104	26,622	98.3	97.8
1426	Crushed and broken trap rock	12	344	390	1,857	4,986	3,071	100.0	100.0
1427	Crushed and broken sandstone	12	205	201	705	2,853	2,299	99.5	100.0
1429	Crushed and broken stone, n.e.c.	5	146	150	506	3,663	1,778	100.0	99.9
1445	Sand and gravel industry (6)	84	1,625	1,559	7,142	21,189	15,680	94.8	96.5
1453	Fire clay industry	24	221	250	908	2,251	1,772	98.7	99.1
1459	Clay, ceramic and refractory minerals, n.e.c. (7)	7	42	57	229	912	596	100.0	99.3

Detail may not add to total because of rounding.

n.e.c. - not elsewhere classified.

(a) The ratio of primary production to total value of products in this industry, both primary and secondary.

(b) The ratio of primary production in this industry to the total value of the products primary to the industry, both in this and other industries.

(1) Also includes industry 3261, vitreous plumbing fixtures, and industry 3263, earthenware food utensils.

(2) Also includes industry 3275, gypsum products.

(3) Also includes industry 3296, mineral wool.

(4) Also includes industry 1413, dimension granite.

(5) Also includes industry 1424, crushed and broken slate.

(6) Also includes industry 1443, glass sand.

(7) Also includes industry 1469, natural abrasives, except sand, and industry 1496, talc, soapstone, and pyrophyllite..

Source: Statistics collected in the 1958 Census of Manufacturing and Mineral Industries by the Department of Internal Affairs, Bureau of Statistics.

TABLE 5: SHIPMENTS OF CRUDE PETROLEUM PRODUCED IN PENNSYLVANIA AND NUMBER OF WELLS CONNECTED, BY COUNTY: 1957, 1958, AND 1959

County	Shipments of crude petroleum (in 42 gallon barrels)			Number of oil wells connected as of December 31		
	(1) 1957	1958	1959	1957	1958	1959
Total	8,092,086	6,367,801	5,855,820	68,151	66,032	64,340
Allegheny	113,475	131,930	128,783	458	450	415
Armstrong	13,810	13,224	12,961	197	197	177
Beaver	15,966	13,534	11,116	182	175	150
Butler	183,130	173,107	172,090	2,689	2,638	2,611
Clarion	53,041	53,109	52,880	1,248	1,209	1,025
Crawford	30,366	27,916	29,391	618	618	618
Elk	28,664	26,425	25,632	705	705	677
Fayette	393	227	277	4	4	5
Forest	42,126	40,586	92,369	1,059	1,018	1,000
Greene	64,311	62,384	60,346	321	318	315
Indiana	-	-	-	1	1	1
Jefferson	3,939	3,488	4,183	94	91	91
Lawrence	-	-	-	-	-	-
McKean	6,507,229	4,895,520	4,344,379	31,021	30,267	29,323
Mercer	4,719	3,806	3,650	229	227	227
Potter	95,233	84,498	79,442	418	418	418
Tioga	1,074	1,197	1,532	16	16	16
Venango	509,142	407,511	422,177	18,732	18,372	17,945
Warren	239,930	249,078	274,452	9,256	8,421	8,465
Washington	185,538	180,261	180,160	903	887	861

(1) Revised 1957 figures.

Source: Statistics collected in annual Census of Petroleum Pipeline carriers by the Department of Internal Affairs, Bureau of Statistics.

TABLE 6: DEEP MINED, STRIPPING, AND BANK ANTHRACITE PRODUCTION IN PENNSYLVANIA,  
BY COUNTY: 1959

7

(Employment figures differ from those in Table 3. See explanatory notes.)

County	Production (in net tons)				Percentage of total production	Total employees	Total fatalities
	Total	Deep mined	Stripping	Bank			
Total, the state	19,670,615	9,416,258	7,272,661	2,981,696	100.0	24,112	46
Carbon	518,252	327,210	84,267	106,775	2.6	613	1
Columbia	692,224	393,235	242,863	56,126	3.5	853	2
Dauphin	142,720	37,804	63,027	41,889	0.7	208	-
Lackawanna	2,147,827	1,320,501	486,274	341,052	10.9	3,235	6
Lebanon	4,450	872	-	3,578	0.02	6	-
Luzerne	6,172,748	3,262,257	2,242,426	668,065	31.4	8,397	24
Northumberland	2,551,604	1,341,829	621,117	588,658	13.0	2,857	4
Schuylkill	7,427,631	2,728,666	3,525,103	1,173,862	37.8	7,917	9
Sullivan	8,052	3,884	2,477	1,691	0.04	22	-
Wayne	5,107	-	5,107	-	0.03	4	-

Source: Pennsylvania Department of Mines.

TABLE 7: AUGER, DEEP, AND STRIP MINED BITUMINOUS COAL PRODUCTION IN PENNSYLVANIA,  
BY COUNTY: 1959

(Employment figures differ from those in Table 3. See explanatory notes.)

County	Production (in net tons)				Percentage of total production	Total employees	Total fatalities
	Total	Auger mined	Deep mined	Strip mined			
Total, the state	65,627,585	197,645	44,922,941	20,506,999	100.0	37,337	35
Allegheny	4,769,780	-	4,211,111	558,669	7.3	2,626	3
Armstrong	2,662,867	80,943	1,227,413	1,354,511	4.1	1,195	2
Beaver	259,607	-	19,888	239,719	0.4	120	-
Bedford	176,447	-	117,520	58,927	0.3	220	-
Blair	79,311	-	12,328	66,983	0.1	65	-
Bradford	6,798	-	-	6,798	0.01	4	-
Butler	1,962,372	17,845	238,981	1,705,546	3.0	697	-
Cambria	7,250,476	703	6,790,798	458,975	11.0	6,000	3
Cameron	51,629	-	-	51,629	0.1	35	-
Centre	747,122	-	55,856	691,266	1.1	389	-
Clarion	3,074,851	8,781	73,816	2,992,254	4.7	853	3
Clearfield	5,663,175	18,224	1,157,290	4,487,561	8.6	2,796	2
Clinton	638,673	-	14,934	623,739	1.0	157	-
Elk	354,470	18,042	167,808	168,620	0.5	237	1
Fayette	2,754,230	-	2,368,186	386,044	4.2	2,130	1
Greene	9,649,491	-	9,642,248	7,243	14.7	5,208	8
Huntingdon	71,123	-	19,574	51,549	0.1	95	-
Indiana	6,200,151	13,243	5,153,735	1,033,173	9.4	3,199	6
Jefferson	1,090,725	12,581	253,643	824,501	1.7	860	-
Lawrence	1,003,472	-	7,140	996,332	1.5	235	-
Lycoming	57,178	-	14,308	42,870	0.1	36	-
McKean	42,128	-	-	42,128	0.1	17	-
Mercer	525,453	-	41,959	483,494	0.8	168	-
Somerset	2,211,735	6,221	1,004,899	1,200,615	3.4	2,148	1
Tioga	211,027	-	22,636	188,391	0.3	107	-
Venango	607,707	-	969	606,738	0.9	159	-
Washington	10,069,016	21,062	9,030,334	1,017,620	15.3	5,660	3
Westmoreland	3,436,571	-	3,275,467	161,104	5.2	1,921	2

Source: Pennsylvania Department of Mines and Mineral Industries.

TABLE 8: EMPLOYMENT FOR THE MAJOR MINERAL INDUSTRIES IN PENNSYLVANIA  
BY COUNTY: FIRST QUARTER, 1959

County	Number of employees					
	All mineral industries	Anthracite mining	Bituminous coal mining	Crude petroleum and natural gas	Nonmetallic mining and quarrying	Other (1)
Total	70,168	19,587	37,729	4,114	2,739	5,999
Adams	39	-	-	-	39	-
Allegheny	5,938	-	4,633	788	-	517
Armstrong	1,091	-	886	115	90	-
Beaver	196	-	174	-	-	22
Bedford	178	-	64	-	114	-
Berks	778	-	-	-	128	650
Blair	473	-	136	-	337	-
Bradford	17	-	-	-	-	17
Bucks	412	-	-	-	-	412
Butler	797	-	550	148	-	99
Cambria	6,778	-	6,771	-	-	7
Cameron	-	-	-	-	-	-
Carbon	357	332	-	-	25	-
Centre	457	-	393	-	-	64
Chester	165	-	-	-	-	165
Clarion	814	-	627	167	20	-
Clearfield	2,390	-	2,241	-	149	-
Clinton	50	-	-	-	-	50
Columbia	402	395	-	-	-	7
Crawford	118	-	-	112	6	-
Cumberland	98	-	-	-	-	98
Dauphin	189	-	-	-	-	189
Delaware	272	-	-	-	268	4
Elk	224	-	192	-	-	32
Erie	32	-	-	-	-	32
Fayette	2,837	-	2,724	-	-	113
Forest	37	-	-	-	-	37
Franklin	201	-	-	-	-	201
Fulton	-	-	-	-	-	-
Greene	5,306	-	5,197	-	-	109
Huntingdon	73	-	-	-	-	73
Indiana	3,186	-	3,141	-	-	45
Jefferson	745	-	495	250	-	0
Juniata	-	-	-	-	-	-
Lackawanna	3,759	3,466	-	-	-	293
Lancaster	306	-	-	-	296	10
Lawrence	704	-	217	-	487	-
Lebanon	1,123	-	-	-	-	1,123
Lehigh	196	-	-	-	-	196
Luzerne	7,351	7,275	-	-	-	76
Lycoming	133	-	-	-	-	133
McKean	1,826	-	-	1,803	-	23
Mercer	213	-	179	-	-	34
Mifflin	94	-	-	-	-	94
Monroe	16	-	-	-	-	16
Montgomery	336	-	-	-	308	28
Montour	29	-	-	-	-	29
Northampton	205	-	-	-	-	205
Northumberland	1,994	1,981	-	-	-	13
Perry	-	-	-	-	-	-
Philadelphia	219	-	112	-	-	107
Pike	-	-	-	-	-	-
Potter	89	-	-	79	10	-
Schuylkill	6,190	6,138	-	-	-	52
Snyder	52	-	-	-	-	52
Somerset	1,760	-	1,685	-	-	75
Sullivan	-	-	-	-	-	-
Susquehanna	8	-	-	-	-	8
Tioga	86	-	-	-	-	86
Union	-	-	-	-	-	-
Venango	295	-	-	259	-	36
Warren	101	-	-	-	-	101
Washington	5,501	-	5,231	257	13	-
Wayne	64	-	-	-	-	64
Westmoreland	2,241	-	2,081	136	24	-
Wyoming	24	-	-	-	-	24
York	440	-	-	-	425	15
Statewide (2)	163	-	-	-	-	163

(1) Includes detail not reported to avoid revealing confidential data.

(2) Data for Cameron, Fulton, Juniata, Perry, Pike, Sullivan and Union Counties are not shown separately in order not to reveal data for individual employers. Figures for these counties are included in Statewide.

Source: Pennsylvania Department of Labor and Industry, Bureau of Employment Security.



TABLE 9: WAGES FOR THE MAJOR MINERAL INDUSTRIES IN PENNSYLVANIA BY COUNTY:  
FIRST QUARTER, 1959

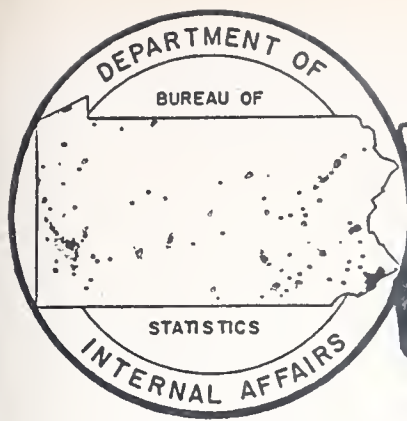
County	Wages and salaries					
	All mineral industries	Anthracite mining	Bituminous coal mining	Crude petroleum and natural gas	Nonmetallic mining and quarrying	Other (1)
Total	\$88,704,307	\$22,537,052	\$51,781,931	\$4,355,389	\$3,134,293	\$6,895,642
Adams	40,690	-	-	-	40,690	-
Allegheny	8,975,060	-	7,116,954	1,040,554	-	817,552
Armstrong	1,344,872	-	1,174,240	83,665	86,967	-
Beaver	208,930	-	172,537	-	-	36,393
Bedford	180,049	-	51,931	-	128,118	-
Berks	925,392	-	-	-	119,433	805,959
Blair	441,757	-	121,247	-	320,510	-
Bradford	9,176	-	-	-	-	9,176
Bucks	480,011	-	-	-	-	480,011
Butler	890,412	-	624,047	104,643	-	161,722
Cambria	9,538,394	-	9,534,694	-	-	3,700
Cameron	-	-	-	-	-	-
Carbon	385,860	373,033	-	-	12,827	-
Centre	467,499	-	416,668	-	-	50,831
Chester	167,233	-	-	-	-	167,233
Clarion	785,907	-	628,802	136,672	20,433	-
Clearfield	2,344,442	-	2,185,874	-	158,568	-
Clinton	42,571	-	-	-	-	42,571
Columbia	471,356	463,666	-	-	-	7,690
Crawford	114,690	-	-	110,865	3,825	-
Cumberland	87,409	-	-	-	-	87,409
Dauphin	185,906	-	-	-	-	185,906
Delaware	283,364	-	-	-	281,231	2,133
Elk	261,390	-	236,104	-	-	25,286
Erie	30,693	-	-	-	-	30,693
Fayette	4,530,123	-	4,420,051	-	-	110,072
Forest	29,951	-	-	-	-	29,951
Franklin	201,166	-	-	-	-	201,166
Fulton	-	-	-	-	-	-
Greene	7,284,380	-	7,215,670	-	-	68,710
Huntingdon	69,746	-	-	-	-	69,746
Indiana	4,835,198	-	4,790,285	-	-	44,913
Jefferson	725,176	-	436,647	288,279	-	250
Juniata	-	-	-	-	-	-
Lackawanna	3,977,064	3,689,882	-	-	-	287,182
Lancaster	329,205	-	-	-	315,360	13,845
Lawrence	908,033	-	231,664	-	676,369	-
Lebanon	1,446,002	-	-	-	-	1,446,002
Lehigh	202,562	-	-	-	-	202,562
Luzerne	9,405,774	9,331,869	-	-	-	73,905
Lycoming	130,710	-	-	-	-	130,710
McKean	1,999,330	-	-	1,977,630	-	21,700
Mercer	231,369	-	199,913	-	-	31,456
Mifflin	116,037	-	-	-	-	116,037
Monroe	13,250	-	-	-	-	13,250
Montgomery	364,141	-	-	-	338,812	25,329
Montour	21,368	-	-	-	-	21,368
Northampton	324,952	-	-	-	-	324,952
Northumberland	1,964,345	1,953,210	-	-	-	11,135
Perry	-	-	-	-	-	-
Philadelphia	394,394	-	198,456	-	-	195,938
Pike	-	-	-	-	-	-
Potter	87,392	-	-	84,577	2,815	-
Schuylkill	6,763,002	6,725,392	-	-	-	37,610
Snyder	26,655	-	-	-	-	26,655
Somerset	2,004,007	-	1,944,283	-	-	59,724
Sullivan	-	-	-	-	-	-
Susquehanna	2,428	-	-	-	-	2,428
Tioga	82,744	-	-	-	-	82,744
Union	-	-	-	-	-	-
Venango	187,024	-	-	140,102	-	46,922
Warren	69,717	-	-	-	-	69,717
Washington	7,484,494	-	7,247,718	228,705	8,071	-
Wayne	45,172	-	-	-	-	45,172
Westmoreland	3,011,385	-	2,834,146	159,697	17,542	-
Wyoming	14,677	-	-	-	-	14,677
York	616,090	-	-	-	602,722	13,368
Statewide (2)	142,181	-	-	-	-	142,181

(1) Includes detail not reported to avoid revealing confidential data.

(2) Data for Cameron, Fulton, Juniata, Perry, Pike, Sullivan and Union counties are not shown separately in order not to reveal data for individual employers. Figures for these counties are included in Statewide.

Source: Pennsylvania Department of Labor and Industry, Bureau of Employment Security.





**SPECIAL RELEASE**

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APRIL 1961

RELEASE NO. S-8

(1965 Revised Edition follows)

# RE-APPORTIONMENT IN PENNSYLVANIA

## FACTS AND FIGURES ON CONGRESSIONAL AND STATE LEGISLATIVE DISTRICTS

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**A REPORT TO THE PUBLIC AND THE GENERAL ASSEMBLY**

ERRATA SHEET

RE-APPORTIONMENT IN PENNSYLVANIA

In Table 5, Fulton County was omitted: Figures for the county are as follows: district number (none); number of representatives, 1; population in 1950, 10,387; population in 1960, 10,597; absolute change 1950-60, +210; percentage change 1950-60, +2.0; amount under the state average population per representative, -43,305; percent under the state average population for representative, -80.3; 1960 district population per representative in decimal relation to one ratio, 0.19.



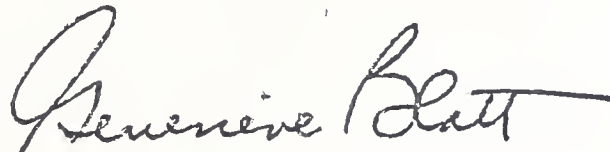
## P R E F A C E

April 1961

The purpose of this publication is twofold: to help the Pennsylvania General Assembly in its mandated task of re-apportioning the state's legislative districts and to provide the citizenry with information about these districts and the adequacy of their representation.

In this report we have assembled statistical tables, maps, and textual explanations bearing on the re-apportionment problem, and we have supplemented these with special population data and a bibliography of sources on the subject.

We sincerely hope that this report will be useful.

A handwritten signature in cursive script, reading "Genevieve Blatt". The signature is written in dark ink and is positioned above the printed name and title.

Genevieve Blatt  
Secretary of Internal Affairs

# RE-APPORTIONMENT IN PENNSYLVANIA:

## Facts and Figures on Congressional and State Legislative Districts

### CONTENTS

	<u>Page</u>
Introduction	1
Map 1--Population of Pennsylvania by County, April 1, 1960	2
<u>PART I</u>	
Explanation of Congressional Apportionment and Districting	3
Map 2--Congressional Districts in Pennsylvania: March, 1961	4
Map 3--Congressional Districts in Allegheny and Philadelphia Counties: March, 1961	5
Map 4--Congressional Districts in Philadelphia: March, 1961	6
Map 5--Congressional Districts in Pittsburgh: March, 1961	7
Table 1--Statistics on Congressional Apportionment and Representation in Pennsylvania	8
<u>PART II</u>	
Explanation of State Senatorial Apportionment and Districting	9
Text Table A--The Arithmetic of Assigning Senators	10
Map 6--State Senatorial Districts in Pennsylvania: March, 1961	11
Map 7--State Senatorial Districts in Allegheny and Philadelphia Counties: March, 1961	12
Map 8--State Senatorial Districts in Philadelphia: March, 1961	13
Map 9--State Senatorial Districts in Pittsburgh: March, 1961	14
Table 2--Statistics on State Senatorial Apportionment and Representation in Pennsylvania	15
<u>PART III</u>	
Explanation of State House of Representatives' Apportionment and Districting	17
Map 10--State House of Representatives' Districts in Pennsylvania: March, 1961	19
Map 11--Pennsylvania Counties Shaded According to Degree of Representation in the State House of Representatives: March, 1961	20
Map 12--State Representative Districts in Philadelphia: March, 1961	21
Map 13--State Representative Districts in Pittsburgh: March, 1961	22
Table 3--County Statistics on State House of Representatives' Apportionment and Representation in Pennsylvania	23
Table 4--Statistics on State House of Representatives' Districts in Penn- sylvania	24
Table 5--Statistics on State House Representatives in Pennsylvania	27
Bibliography--A. Sources Used in This Report	29
B. Other References	30
Appendix A--Components of Population Change in Pennsylvania by County: 1950 to 1960 (table)	32
Appendix B--Population by Ward of Pittsburgh, Erie, Scranton, and Philadelphia: April 1, 1960	33

## Introduction

The General Assembly of Pennsylvania is now meeting for the first time since the completion of the 1960 Federal decennial census. Section 18 of Article II of the Pennsylvania Constitution of 1874, the section entitled "Time of Apportionment," provides specifically for re-apportionment of districts of the State Senate and House of Representatives at this time. It uses these words:

The General Assembly...immediately after each United States decennial census, shall apportion the State into senatorial and representative districts agreeably to the provisions of the two next preceding sections [Sections 16 and 17 on State Senate and House apportioning procedures respectively.]<sup>1</sup>

Neither house's districts have been re-aligned on the regular basis that the Constitution sets forth. The Senate has not re-apportioned its districts since 1921, while the House last re-apportioned its districts in 1953. Suits have been brought in courts of the Commonwealth challenging the legislature's failure to redistrict after each Federal decennial census. But the State Supreme Court has taken the now-generally-prevailing position that the General Assembly's failure to re-apportion is a purely political matter which rests upon the integrity of the Assembly as representatives of the people, and that therefore it is not justiciable.<sup>2</sup>

As for congressional redistricting, on the other hand, the Assembly has kept pace with the decennial censuses in enacting new apportionment laws early in every decade. In 1951 it passed the law setting up the present districts. State representation in Congress is controlled by the amended Congressional Apportionment Act of 1929, which carries certain sanctions to be applied against remiss states. In the case of a state's losing seats, as will occur in Pennsylvania for the 1963 Congress, all the representatives would be elected at large unless the Commonwealth's legislature took appropriate action in passing a redistricting measure.

In summing up, we see that, past practice quite aside, in all three categories of legislative districts--State senatorial, State representative, and congressional--the General Assembly is under a State constitutional or congressional mandate to re-apportion in line with the 1960 census.

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<sup>1</sup> Printed on page 29 of the 1959-60 Pennsylvania Manual, Vol.94, published by the Department of Property and Supplies.

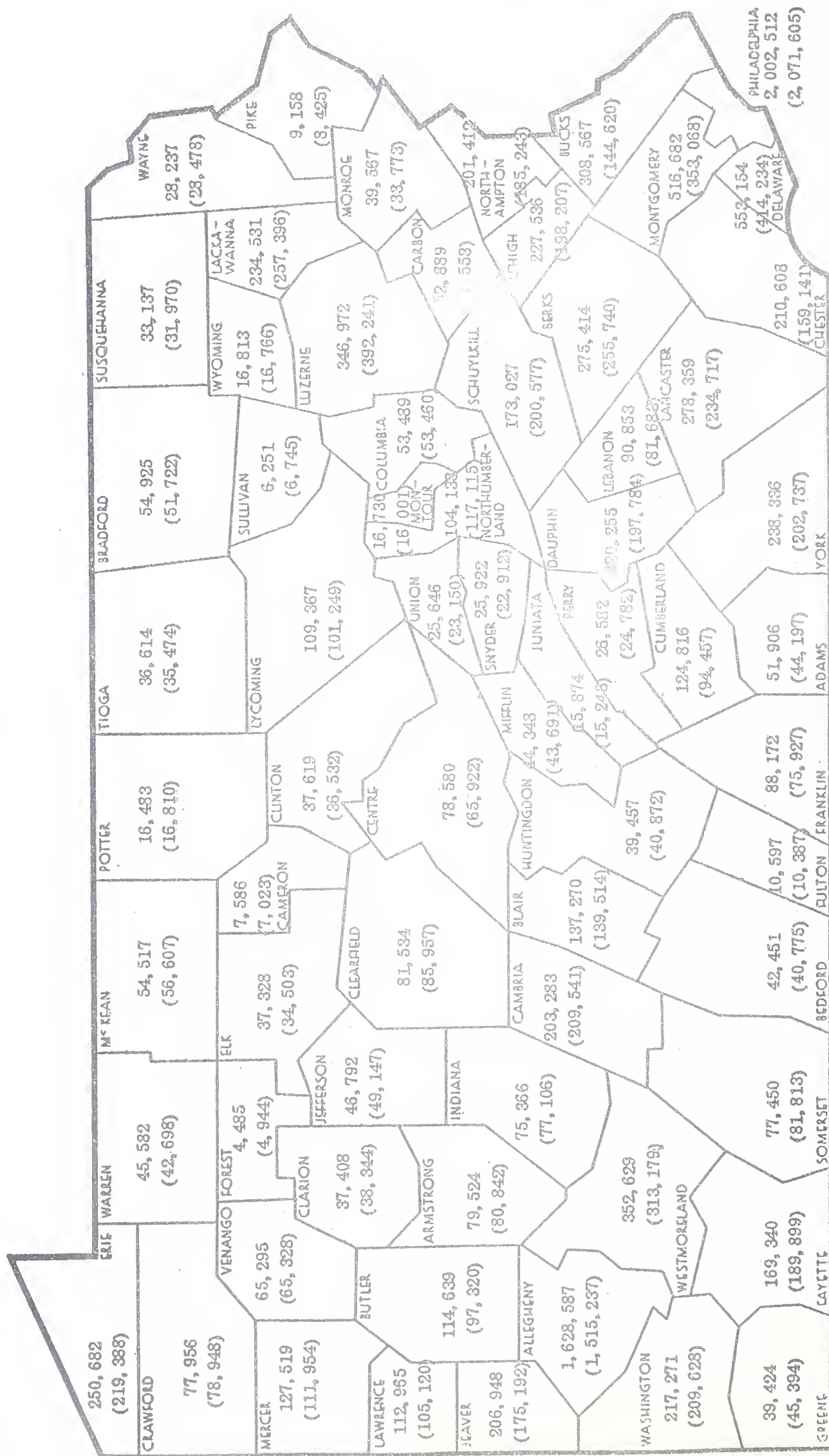
<sup>2</sup> This decision is basically an enunciation of the so-called "Colegrove doctrine," stemming from a U. S. Supreme Court ruling of 1946. The two recent Pennsylvania Supreme Court decisions on the question are *Butcher v. Rice*, 153 A. 2d 869, 397 Pa. 158, 1959; and *Costello v. Rice*, 53 A. 2d 888, 397 Pa. 198, 1959.

The possibility of a change in viewpoint by the U. S. Supreme Court in this matter is indicated by its recent acceptance for consideration of *Baker et Al. v. Carr et Al.* This case, brought on appeal from a U. S. District Court of Tennessee, was listed with the Supreme Court on November 21, 1960, with probable jurisdiction noted. As in the Colegrove case, it involves an attempt by citizens to compel legislative redistricting, this time in Tennessee, where the legislature has failed to re-apportion in accordance with results of the Federal decennial censuses. By its mere willingness to review this case the Court seems to be indicating that it may take a different stand on the question of judicial power to enforce re-apportionment.



## POPULATION OF PENNSYLVANIA BY COUNTY, APRIL 1, 1960

(1950 population figures are in parentheses)



Total population for the state of Pennsylvania as of April 1, 1950, was 10,498,012. Total population as of April 1, 1960, was 11,319,366.

SOURCE: Figures for 1950 are from the U. S. Census of Population; 1950, Vol. II, Characteristics of the Population, Part 38, Pennsylvania. Figures for 1960 are from Adams.

U. S. Department of Commerce.



Explanation of Congressional Apportionment and Districting

By law congressional apportionment must be carried out by the method of equal proportions, by which the percentage of difference between any two states in the average number of people per representative is made as small as possible. This mode of apportioning was officially selected by Congress in the Act of June 18, 1929, as amended by Act of November 15, 1941 and intervening legislation.<sup>1</sup>

Under this system each state is first assigned one representative, as provided by the Constitution of the United States in Article I, Section 3. Then a set of values is calculated for each state which provides a measure of the strength of the state's claim to its second representative, its third, and so on.<sup>2</sup>

By this method Pennsylvania has, since the 1950 decennial census was applied, been allotted 30 representatives out of a total assigned number of 435 for all states. Because of the entrance of Alaska and Hawaii into the Union this number was temporarily increased to 437, but in the application of the 1960 census it will be reduced again to 435. Out of this total of 435 representatives Pennsylvania, having a smaller proportion of the country's population in 1960 than it did in 1950, is entitled to only 27 representatives. Similar adjustments have been made by the Congress for other states on the basis of the 1960 census.

The obligation of the state legislatures, then, as called for by general practice, is to establish the number and territory of the congressional districts from which these representatives are to be elected in the future. By the time of the 1962 elections for the 88th Congress, to begin serving in 1963, the revision in numbers of representatives must have been effected by the states, or else one of three sanctions applies: (1) if the number of districts is the same as the number of representatives, the existing districts must be used; (2) if the number of districts is greater than the number of representatives, all the representatives must be elected at large; (3) if the number of districts is less than the number of representatives, the extra representatives must be elected at large.

The General Assembly of Pennsylvania fulfilled its obligation in respect to the 1950 census by passing Act No. 464 of December 22, 1951, P.L. 1734, re-apportioning the state into 30 districts, each to elect one representative.<sup>3</sup> In the previous decade, as a result of the 1940 census, this state had been allotted 33 representatives, and the Assembly accordingly had re-apportioned the state into 33 districts by Act No. 119 of 1943.

Although Pennsylvania is to lose three representatives because of the 1960 census, it is nevertheless true that each of the remaining ones will represent an average of 69,302 more people than before. For by the 1950 census each of the 30 representatives stood for an average of 349,934 people, whereas by the 1960 census each of the 27 will represent an average of 419,236. In re-apportioning, then, every one of the 27 districts to be formed should come as close as possible to having 419,236 people in it.

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1 The pertinent section of this act is printed on page 701 of the Pennsylvania Manual, op. cit.

2 Details of the equal-proportions method are given in Congressional Apportionment--Role of the Bureau of the Census, Report of the Subcommittee on Census and Government Statistics of the Committee on Post Office and Civil Service, House of Representatives, House Report No. 2223, 86th Cong., 2nd sess., Washington: U.S. Government Printing Office, September 14, 1960.

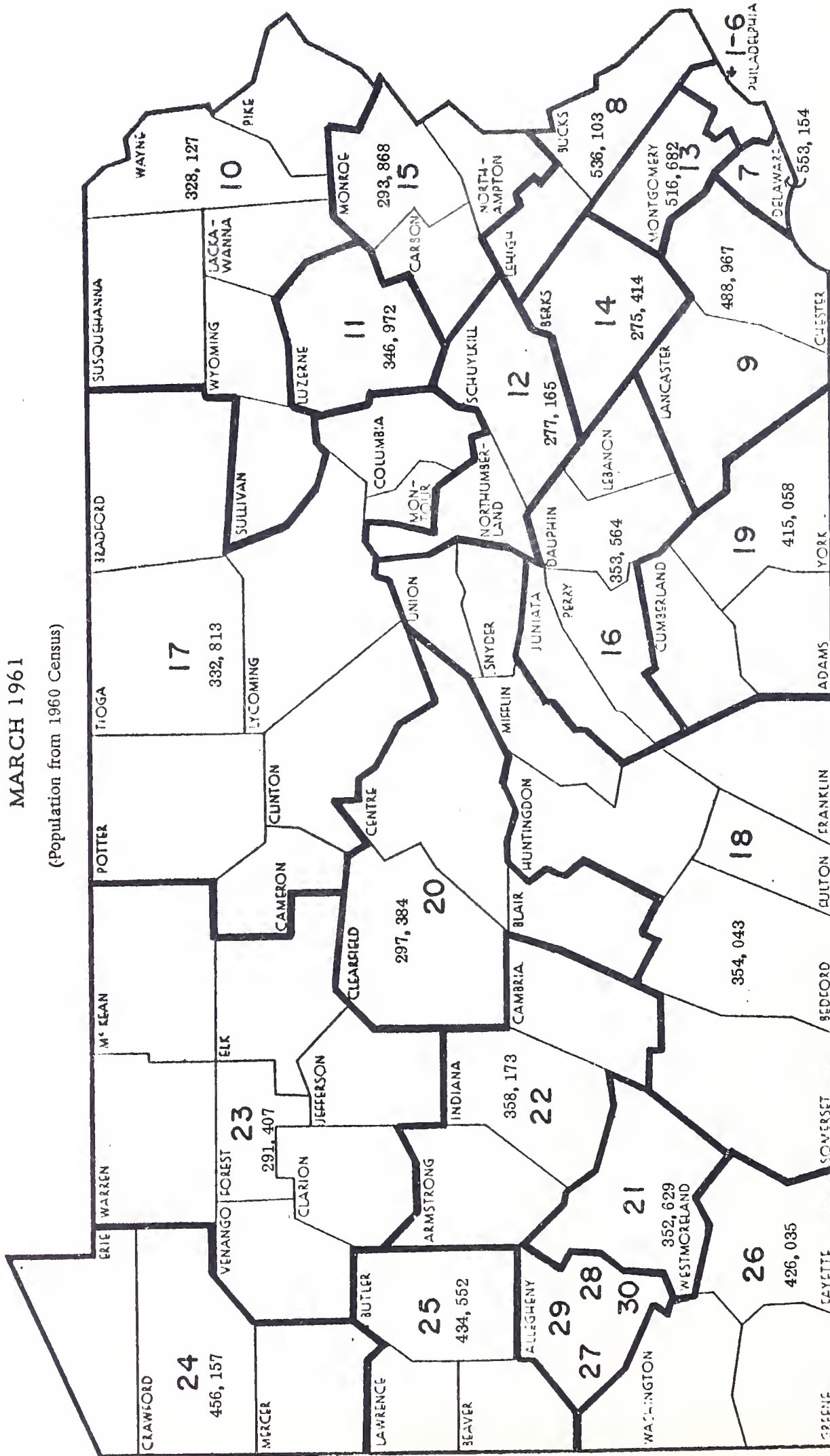
3 Printed on page 707 of the Pennsylvania Manual, op. cit.

MAP 2

# CONGRESSIONAL DISTRICTS IN PENNSYLVANIA

MARCH 1961

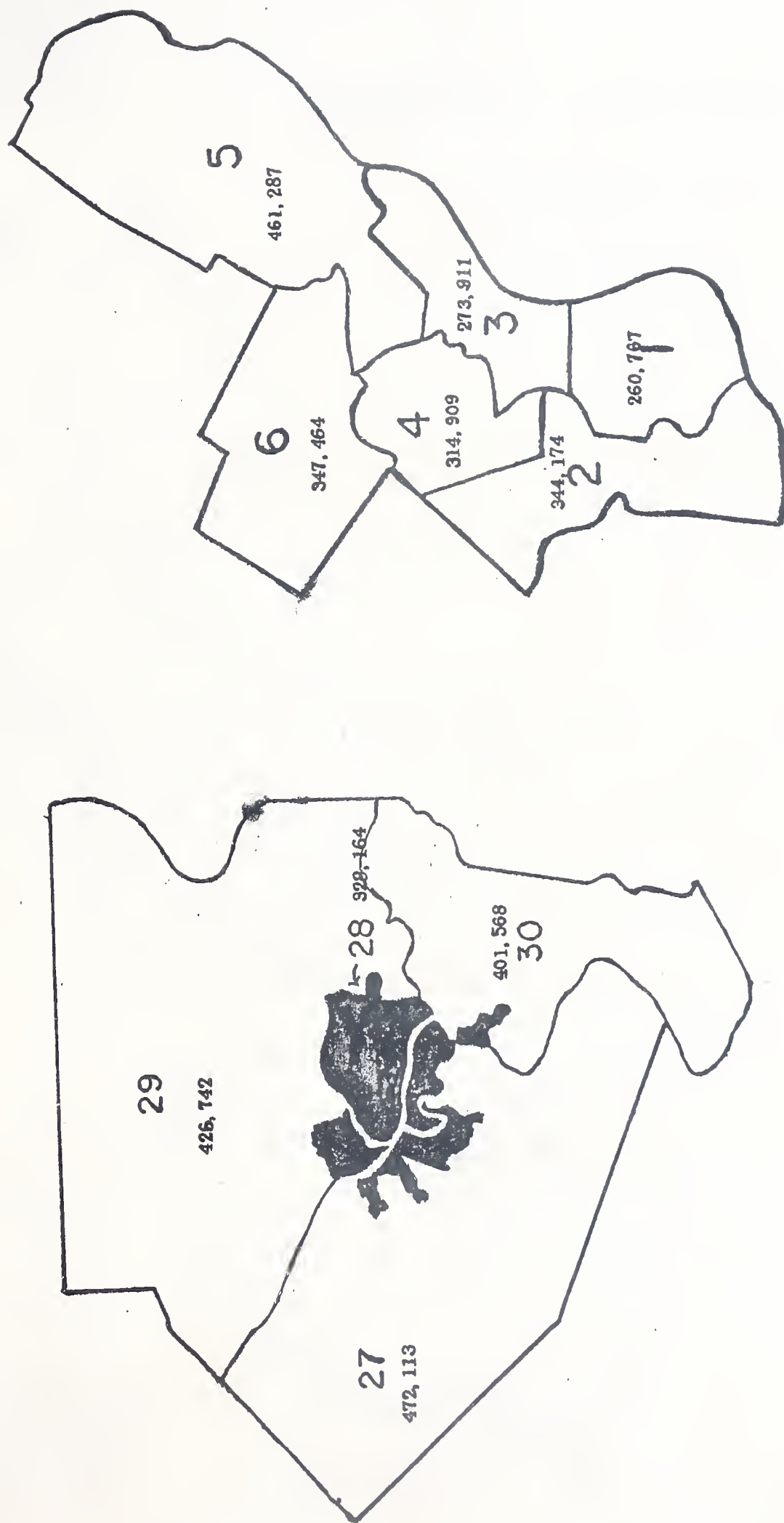
(Population from 1960 Census)



Source: Prepared by the Bureau of Statistics, Department of Internal Affairs, from 1959-60 Pennsylvania Manual, Vol. 94; and from Table 1 of this report showing populations. Districts based on P. L. 1734 of December 22, 1951.

# CONGRESSIONAL DISTRICTS IN ALLEGHENY AND PHILADELPHIA COUNTIES: MARCH 1961

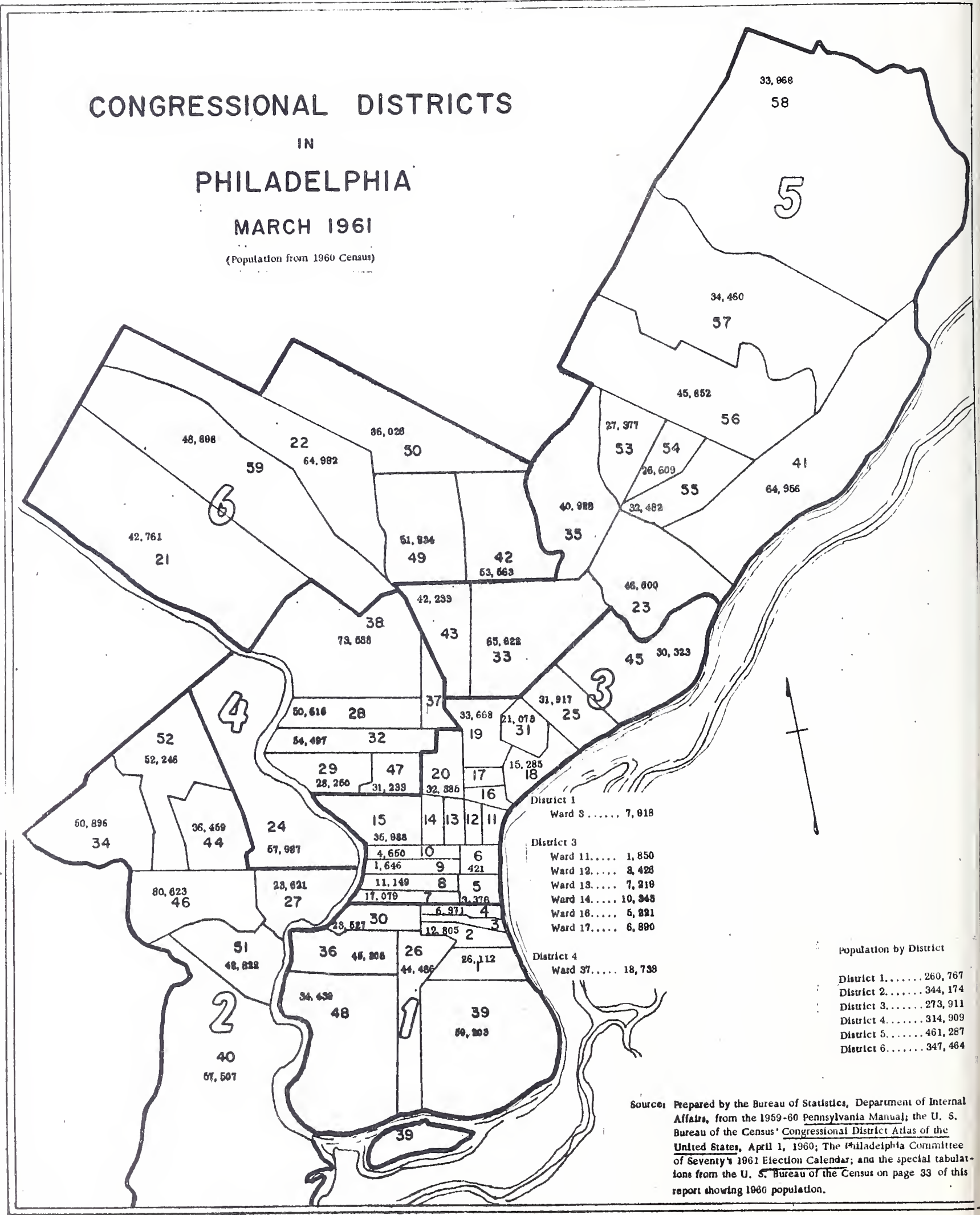
(Population figures are from the 1960 Census)



Source: Prepared by the Bureau of Statistics, Department of Internal Affairs, from the 1959-60 Pennsylvania Manual, the U. S. Bureau of the Census' Congressional District Atlas of the United States, April 1, 1960; the Allegheny County Department of Elections' County of Allegheny Digest of Election Laws and Calendar, 1960; the Philadelphia Committee of Seventy's 1961 Election Calendar, containing a ward map of Philadelphia; and Table 1 of this report, showing district population.



CONGRESSIONAL DISTRICTS  
IN  
PHILADELPHIA  
MARCH 1961  
(Population from 1960 Census)

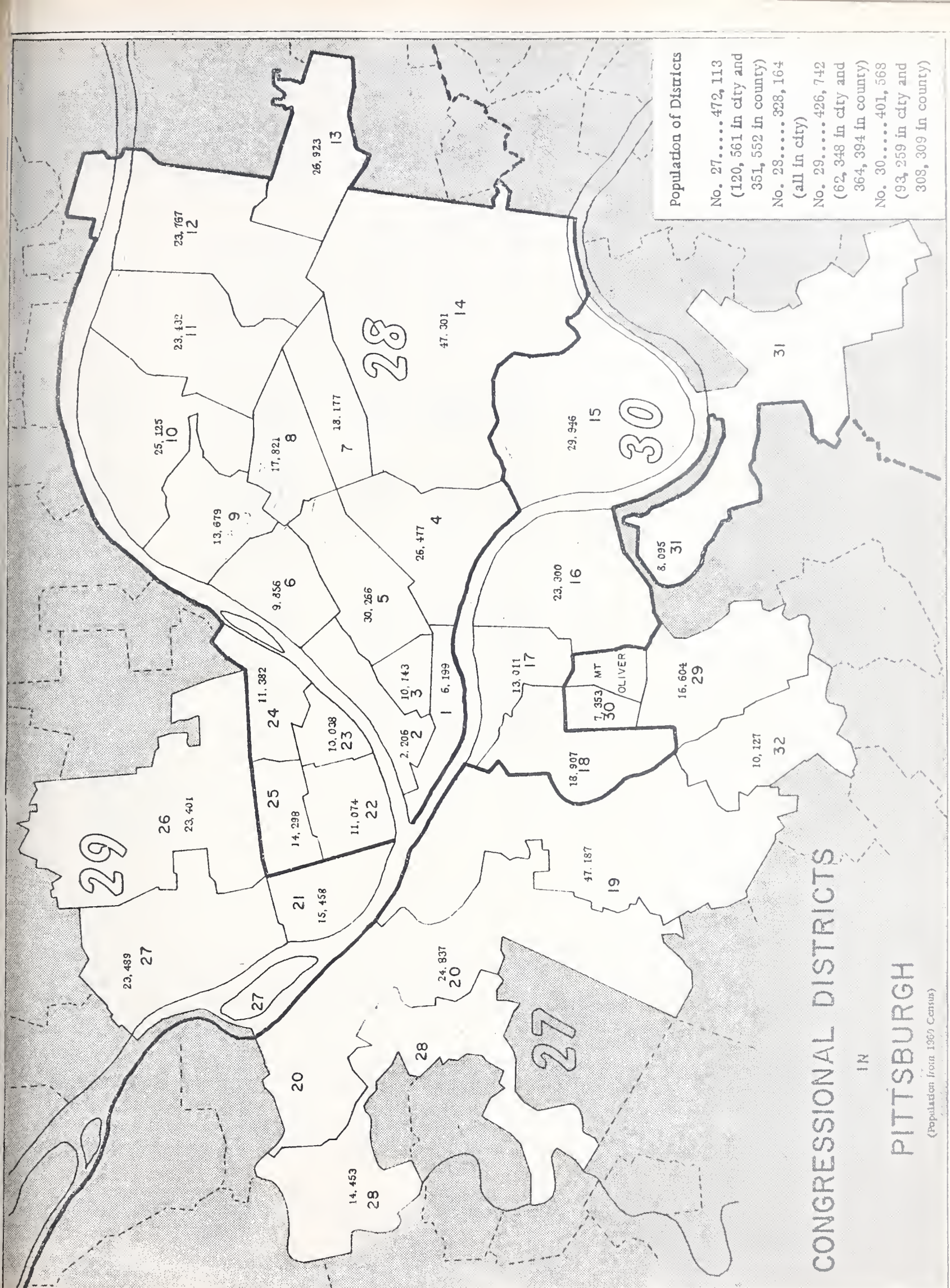


Population by District

District 1.....	260,767
District 2.....	344,174
District 3.....	273,911
District 4.....	314,909
District 5.....	461,287
District 6.....	347,464

Source: Prepared by the Bureau of Statistics, Department of Internal Affairs, from the 1959-60 Pennsylvania Manual; the U. S. Bureau of the Census' Congressional District Atlas of the United States, April 1, 1960; The Philadelphia Committee of Seventy's 1961 Election Calendar; and the special tabulations from the U. S. Bureau of the Census on page 33 of this report showing 1960 population.





Population of Districts	
No. 27.....	472, 113 (120, 561 in city and 351, 552 in county)
No. 28.....	328, 164 (all in city)
No. 29.....	426, 742 (62, 348 in city and 364, 394 in county)
No. 30.....	401, 568 (93, 259 in city and 308, 309 in county)

# CONGRESSIONAL DISTRICTS IN PITTSBURGH

(Population from 1960 Census)



TABLE 1 : STATISTICS ON CONGRESSIONAL APPORTIONMENT AND REPRESENTATION IN PENNSYLVANIA  
(There are now 30 districts and each district has one representative in the U.S. House of Representatives. This number must be reduced to 27 in the new apportionment based on the 1960 census; thus the number of districts will probably also be reduced to 27.)

District number	Counties or area in present district	District population (1)				Amount over or under state average population per district of 377,312 on basis of 30 seats - 1960 census (2)	Amount over or under state average population per district of 419,236 on basis of 27 seats - 1960 census (2)
		1950 census	1960 census	Absolute change	Percentage change ("-" means decrease)		
	Total, the state	10,498,012	11,319,366	821,354	7.8		
	Philadelphia - total	2,071,605	2,002,512	-69,093	-3.3		
1	Wards 1, 2, 3, 4, 26, 30, 36, 39, 48	310,144	260,767	-49,377	-15.9	-116,545	-158,469
2	Wards 27, 34, 40, 44, 46, 51, 52	376,752	344,174	-32,578	-8.6	-33,138	-75,062
3	Wards 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 25, 31, 45	342,118	273,911	-68,207	-19.9	-103,401	-145,325
4	Wards 24, 28, 29, 32, 37, 38, 47	340,173	314,909	-25,264	-7.4	-62,403	-104,327
5	Wards 23, 33, 35, 41, 43, 53, 54, 55, 56, 57, 58 (wards 53-58 were created out of the 35th ward in 1957)	372,257	461,287	89,030	23.9	83,975	42,051
6	Wards 21, 22, 42, 49, 50, 59 (ward 59 was created out of the 22nd ward in 1959)	330,161	347,464	17,303	5.2	-29,848	-71,772
7	Delaware	414,234	553,154	138,920	33.5	175,842	133,918
8	Bucks, Lehigh	342,827	536,103	193,276	56.3	158,791	116,867
9	Chester, Lancaster	393,858	488,967	95,109	24.1	111,655	69,731
10	Lackawanna, Pike, Sullivan, Wayne, Wyoming, Susquehanna	349,780	328,127	-21,653	-6.1	-49,185	-91,109
11	Luzerne	392,241	346,972	-45,269	-11.5	-30,340	-72,264
12	Northumberland, Schuylkill	317,692	277,165	-40,527	-12.8	-100,147	-142,071
13	Montgomery	353,068	516,682	163,614	46.3	139,370	97,446
14	Berks	255,740	275,414	19,674	7.7	-101,898	-143,822
15	Carbon, Northampton, Monroe	276,574	293,868	17,294	6.3	-83,444	-125,368
16	Dauphin, Juniata, Lebanon, Perry	319,492	353,564	34,072	10.7	-23,748	-65,672
17	Cameron, Clinton, Columbia, Bradford, Montour, Potter, Lycoming, Tioga	318,271	332,813	14,542	4.6	-44,499	-86,423
18	Bedford, Franklin, Fulton, Huntingdon, Mifflin, Snyder, Somerset, Union	339,527	354,043	14,516	4.3	-23,269	-65,193
19	Adams, Cumberland, York	341,391	415,058	73,667	21.6	37,746	-4,178
20	Blair, Centre, Clearfield	291,393	297,384	5,991	2.1	-79,928	-121,852
21	Westmoreland	313,179	352,629	39,450	12.6	-24,683	-66,607
22	Armstrong, Cambria, Indiana	367,489	358,173	-9,316	-2.5	-19,139	-61,063
23	Clarion, Elk, Forest, Jefferson, McKean, Venango, Warren	291,571	291,407	-164	-0.1	-85,905	-127,829
24	Crawford, Erie, Mercer	410,290	456,157	45,867	11.2	78,845	36,921
25	Beaver, Butler, Lawrence	377,632	434,552	56,920	15.1	57,240	15,316
26	Fayette, Greene, Washington	444,921	426,035	-18,886	-4.2	48,723	6,799
27	Allegheny - total	1,515,237	1,628,587	113,350	7.5		
	Wards 19, 20, 28, 29, 30 and 32 of the city of Pittsburgh, the city of Clairton and the boroughs and townships listed in footnote (3)	377,219	472,113	94,894	25.2	94,801	52,877
28	Wards 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 22, 23, and 24 in the city of Pittsburgh	371,044	328,164	-42,880	-11.6	-49,148	-91,072
29	Wards 21, 25, 26, 27 in the city of Pittsburgh and the boroughs and townships listed in footnote (4)	376,079	426,742	50,663	13.5	49,430	7,506
30	Wards 15, 16, 17, 18, and 31 in the city of Pittsburgh, the cities of Duquesne and McKeesport and the boroughs and townships listed in footnote (5)	390,895	401,568	10,673	2.7	24,256	-17,668

(1) Except for the total lines giving Philadelphia and Allegheny County data, which are for the entire county, not districts, in each case.

(2) The national average population per district is 413,802 based on the permanent House of Representatives membership of 435 and the final 1960 census count of 180,004,000, including armed forces overseas. This ratio is also based on a consideration of two undistricted states which elect two representatives at large--New Mexico and North Dakota--as though they each had two districts; of six undistricted states which elect one representative at large--Alaska, Delaware, Hawaii, Nevada, Vermont, and Wyoming--as though they were each one district; and of one districted state which elects only one representative--Connecticut--as though it were only one district. For the purpose of this ratio, then, each of the 435 representatives represents one district, and there are in effect as many districts as representatives.

(3) The 27th district includes wards 19, 20, 28, 29, 30, and 32 of the city of Pittsburgh; the city of Clairton; the boroughs of Baldwin, Bethel, Brentwood, Bridgeville, Carnegie, Castle Shannon, Coraopolis, Crafton, Dormont, Green Tree, Heidelberg, Ingram, Jefferson, part of McDonald, McKees Rocks, Mount Oliver, Oakdale, Pleasant Hills, Rosslyn Farms, Thornburg, West Elizabeth, and Whitehall; and the townships of Baldwin, Collier, Crescent, Findlay, Kennedy, Moon, Mount Lebanon, Neville, North Fayette, Robinson, Scott, Snowden, South Fayette, Stowe, and Upper Saint Clair.

(4) The 29th district includes wards 21, 26, 27 of the city of Pittsburgh; the boroughs of Aspinwall, Avalon, Bellevue, Ben Avon, Ben Avon Heights, Blawnox, Brackenridge, Bradford Woods, Cheswick, Churchill, Edgewood, Edgeworth, Emsworth, Etna, Fox Chapel, Glenfield, Haysville, Leetsdale, Millvale, Oakmont, Osborne, Plum, Sewickley Heights, Sewickley Hills, Sharpsburg, Springdale, Tarentum, Verona, West View, and Wilkinsburg; and the townships of Aleppo, East Deer, Fawn, Franklin, Frazer, Hampton, Harmar, Harrison, Indiana, Kilbuck, Leet, Marshall, McCandless, O'Hara, Ohio, Penn Hills, Pine, Reserve, Richland, Ross, Sewickley, Shaler, Springdale, and West Deer.

(5) The 30th district includes wards 15, 16, 17, 18 and 31 of the city of Pittsburgh; the cities of Duquesne and McKeesport; the boroughs of Braddock, Braddock Hills, Chalfant, Dravosburg, East McKeesport, East Pittsburgh, Elizabeth, Forest Hills, Glassport, Homestead, Liberty, Lincoln, Monroeville, Munhall, North Braddock, Pitcairn, Port Vue, Rankin, Swissvale, part of Trafford, Turtle Creek, Versailles, Wall, West Homestead, West Mifflin, Whitaker, White Oak, and Wilmerding; and the townships of Elizabeth, Forward, North Versailles, South Versailles, and Wilkins.

Source: District territory derived from P. L. 1734 of 1951 except for Philadelphia County, part of which was taken from footnotes to the reprint of this law shown in the 1959-60 Pennsylvania Manual, Vol. 94, and for Allegheny County, which was taken from County of Allegheny Digest of Election Laws and Calendar, 1960, Allegheny County Department of Elections. Population figures are final and are taken from the 1950 and 1960 Census of Population of the Bureau of the Census, U. S. Department of Commerce. Information on the districts of other states taken from the Report "Population Summaries" from the Bureau of the Census, Series PC(P3)-1, August, 1960. Data compiled by the Bureau of Statistics, Department of Internal Affairs.

## PART II

### Explanation of State Senatorial Apportionment and Districting

As noted on page 1 of this report, Section 18 of Article II of the Pennsylvania Constitution, Time of Apportionment, stipulates that senatorial re-apportionment be carried out after every census. Section 16 of the same article, Senatorial District Apportionment, states this:

The State shall be divided into fifty senatorial districts of compact and contiguous territory as nearly equal in population as may be, and each district shall be entitled to elect one Senator. Each county containing one or more ratios of population shall be entitled to one Senator for each ratio, and to an additional Senator for a surplus of population exceeding three-fifths of a ratio but no county shall form a separate district unless it shall contain four-fifths of a ratio, except where the adjoining counties are each entitled to one or more Senators, when such county may be assigned a Senator on less than four-fifths and exceeding one-half of a ratio; and no county shall be divided unless entitled to two or more Senators. No city or county shall be entitled to separate representation exceeding one-sixth of the whole number of Senators. No ward, borough or township shall be divided in the formation of a district. The senatorial ratio shall be ascertained by dividing the whole population of the State by the number fifty.<sup>1</sup>

With the basic foundation thus laid by the Constitution, the General Assembly of 1921 promulgated the law that governs the present senatorial apportionment in the Commonwealth. That is Act No. 217 of May 10, 1921, P. L. 449, which was slightly amended by Act No. 80 of April 26, 1923, P. L. 106. The 1921 act, as amended by that of 1923, specifically designates the territory which is to comprise each district. In so doing it provided "that, until the next United States decennial census is taken and an apportionment made thereon, the Senate shall consist of fifty members, and the State is hereby apportioned into fifty senatorial districts, each of which shall be known by the number . . . attached thereto, and shall each be entitled to elect one Senator . . ."<sup>2</sup>

Prior to 1921 the Senatorial districts were re-apportioned only once after the passage of the 1874 Constitution, and that was in 1906. The districts as they are now constituted are still fairly much as they were as a result of that 55-year-old law. The only time since 1921-1923 when a re-apportionment bill was passed, in 1937 (Act No. 457), it was struck down the next year by the Dauphin County Court of Common Pleas because of the inadvertent omission of one municipality's name from the list of those in one district of Allegheny County.<sup>3</sup>

On the basis of final 1960 census figures, one senatorial ratio, one-fiftieth of the Commonwealth's population, is 226,387. To apply Section 16 of Article II of the Constitution, we find that every county containing between four-fifths of a ratio and a whole ratio, i. e., between 181,110 and 226,387, is entitled to one senator. It may get another senator for each whole ratio

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<sup>1</sup> Printed on page 29 of the Pennsylvania Manual, op. cit.

<sup>2</sup> Ibid., page 91.

<sup>3</sup> Lyne v. Lawrence, 45 Dauphin 322, 1938; and Shoemaker v. Lawrence, 31 D. and C. 681, 45 Dauphin 111, 1938.



or portion thereof over three-fifths, 135,832. A county may also be assigned a senator on less than four-fifths of a ratio if all the counties adjoining it are each entitled to one or more senators. In that case the county in point may get a senator if it has over one-half but less than four-fifths of a ratio, or over 113,194 but less than 181,110 population. But in no case, regardless of its population, may any county or city have greater representation than one-sixth of all the senators, which to the nearest whole number is eight.

By inference it is clear that counties not separately entitled to one or more senators must join with other counties bordering them to form the rest of the districts.

The following points can also be found in Section 16:

1. No county may be divided into different districts unless it is entitled to two or more senators (which makes the present division of Lancaster County appear to be unconstitutional).
2. No ward, borough, or township may be divided in the formation of a district (which makes the present ward divisions of districts 38, 40, 42, and 45 in Allegheny County appear to be unconstitutional).
3. Districts are to be of compact and contiguous territory (which makes the composition of district 40 in Allegheny County appear to be unconstitutional because the boroughs of Braddock Hills and Churchill on the western edge do not really adjoin).

The table below gives a breakdown of counties by population range in numerical and ratio form, showing how many counties are in each population-size group and the amount of senatorial representation they get.

Text Table A

## THE ARITHMETIC OF ASSIGNING SENATORS

(Thirty-four senatorial seats are allotted to 19 counties individually entitled to one or more senators in accordance with the 1960 census and the ratio system prescribed in Article II, Section 16 of the Pennsylvania Constitution. The remaining 16 seats are divided among 48 counties that do not qualify for at least one senator by themselves.)

Classification of counties by populations and ratios (one ratio equals 1/50 of the total population, or 226,387)				Number of senators county is entitled to alone	Number of counties in each group	Number of senators from counties in each group
Population range		Equivalent number of ratios				
		In fraction form	In decimal form			
Over - but less than	Over - but less than					
0 - 113,193	1/2	.50	0	42	{16	
113,194 - 181,109	1/2	.80	(1) 0	6		
181,110 - 362,219	(2) 4/5	1.60	1	15	15	
362,220 - 588,607	1 3/5	2.60	2	2	4	
588,608 - 814,994	2 3/5	3.60	3	0	0	
814,995 - 1,041,381	3 3/5	4.60	4	0	0	
1,041,382 - 1,267,768	4 3/5	5.60	5	0	0	
1,267,769 - 1,494,156	5 3/5	6.60	6	0	0	
1,494,157 - 1,720,543	6 3/5	7.60	7	1	7	
1,720,544 and up	7 3/5	7.60	8	1	8	
Total				67	50	

- (1) The exception to the rule is that if a county is bounded by other counties each of which is entitled to one or more senators, then the county in point may be assigned a senator on less than four-fifths but more than one-half a ratio.
- (2) Not over four-fifths (or .80) in this case, but four-fifths (or .80) or over.

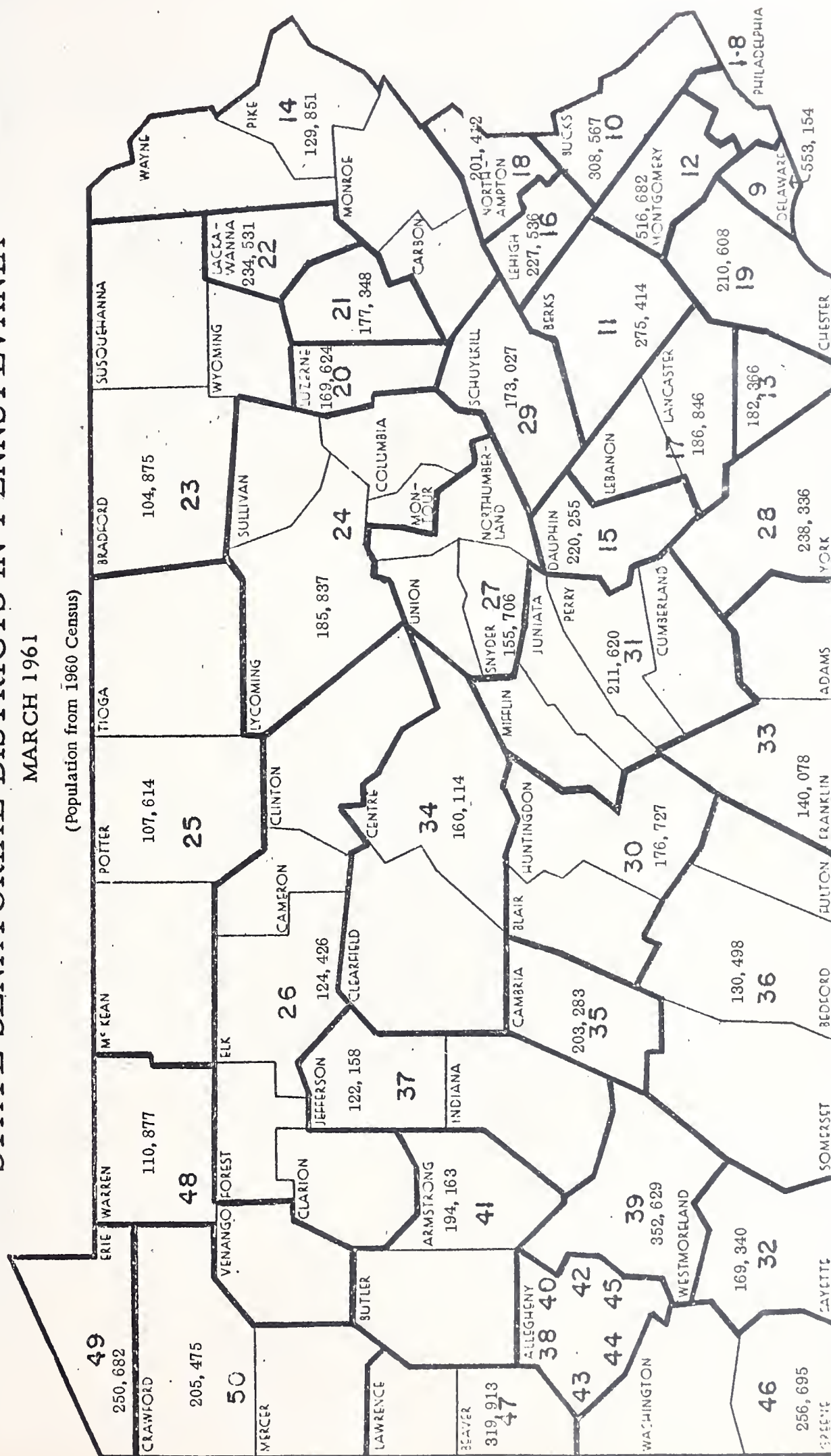


# MAP 6

## STATE SENATORIAL DISTRICTS IN PENNSYLVANIA

MARCH 1961

(Population from 1960 Census)

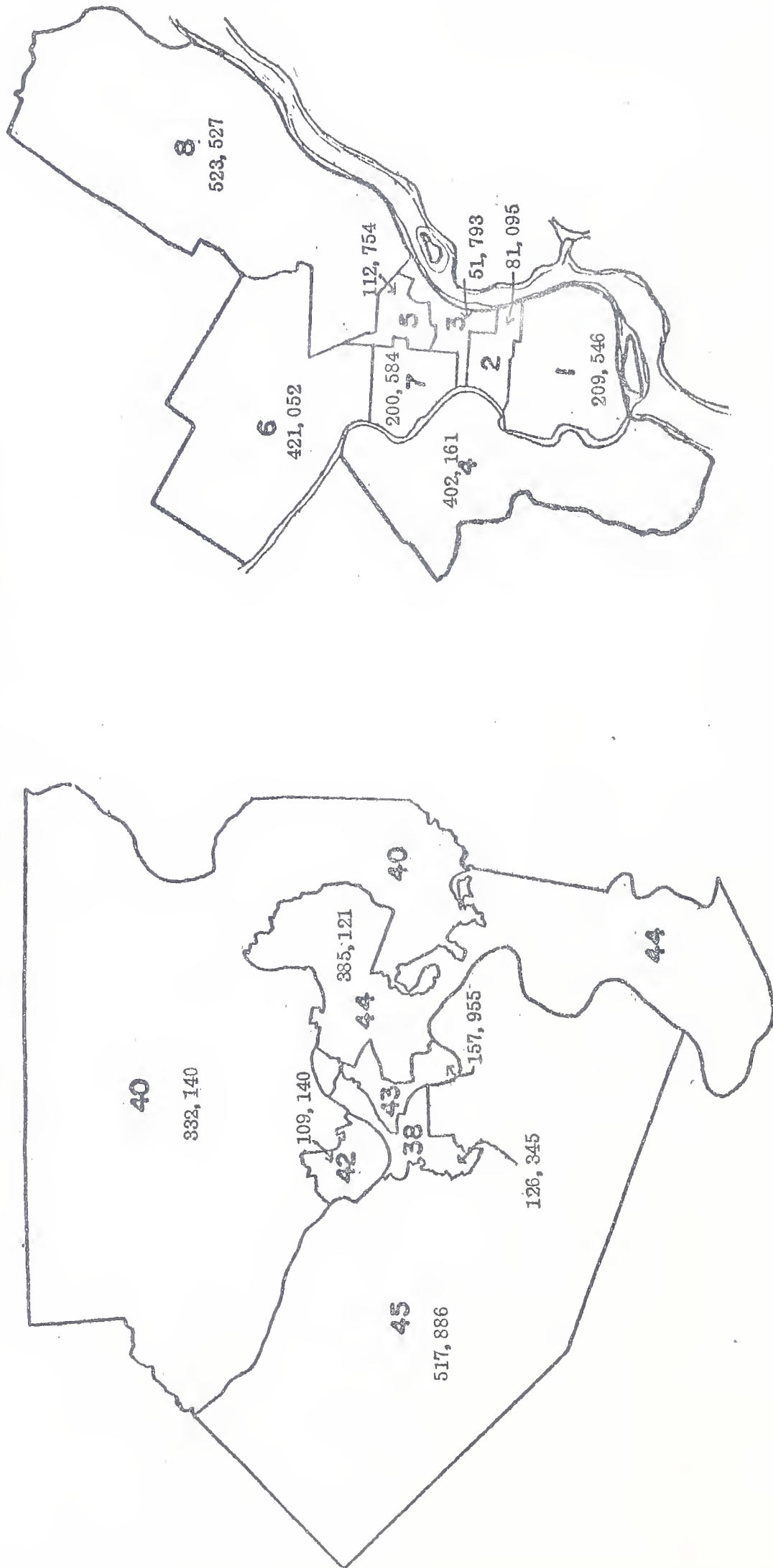


Source: Prepared by the Bureau of Statistics, Department of Internal Affairs, from the 1959-60 Pennsylvania Manual, Vol. 1, 94; and from Table 2 of this report showing populations. Districts based on P. L. 449 of May 10, 1921 as amended by P. L. 106 of April 26, 1923.

MAP 7

# STATE SENATORIAL DISTRICTS IN ALLEGHENY AND PHILADELPHIA COUNTIES : MARCH 1961

(Population figures are from the 1960 Census)



Note: The populations of districts 38 and 45 in Allegheny County are partially estimated because ward 16 is divided between the two districts, and the amount of its population in each district is not known. Nevertheless, since about two-thirds of the 16th ward is in district 38, it is given credit for 15,300 of the 23,300 total ward population, while the part in district 45 is estimated to have about 8,000 people and is given credit for that many. The county total, obtainable by adding up all the separate district populations, is true to the 1960 census count of 1,628,587.

Source: Prepared by the Bureau of Statistics, Department of Internal Affairs, from the 1959-60 Pennsylvania Manual; an Allegheny County Department of Planning map entitled "Senatorial Districts, 1960;" the Allegheny County Department of Elections' County of Allegheny Digest of Election Laws and Calendar, 1960; the Philadelphia Committee on Seventy's 1961 Election Calendar, containing a ward map of Philadelphia; and Table 2 of this report, showing usual population.



# STATE SENATORIAL DISTRICTS

IN

## PHILADELPHIA

MARCH 1961

(Population from 1960 Census)



District 2  
Ward 3..... 7,918  
Ward 7..... 17,079

District 3  
Ward 11..... 1,850  
Ward 12..... 3,428  
Ward 13..... 7,219  
Ward 14..... 10,343  
Ward 16..... 5,221

District 5  
Ward 17..... 6,890  
Ward 37..... 18,738

Population by District

District 1.....	209,546
District 2.....	81,095
District 3.....	51,793
District 4.....	402,161
District 5.....	112,754
District 6.....	421,052
District 7.....	200,584
District 8.....	523,527

Source: Prepared by the Bureau of Statistics, Department of Internal Affairs, from the 1959-60 Pennsylvania Manual; the Philadelphia Committee of Seventy's 1961 Election Calendar, containing a ward map of Philadelphia; and the special ward tabulations from the U. S. Bureau of the Census on page 33 of this report showing 1960 population.



MAP 9

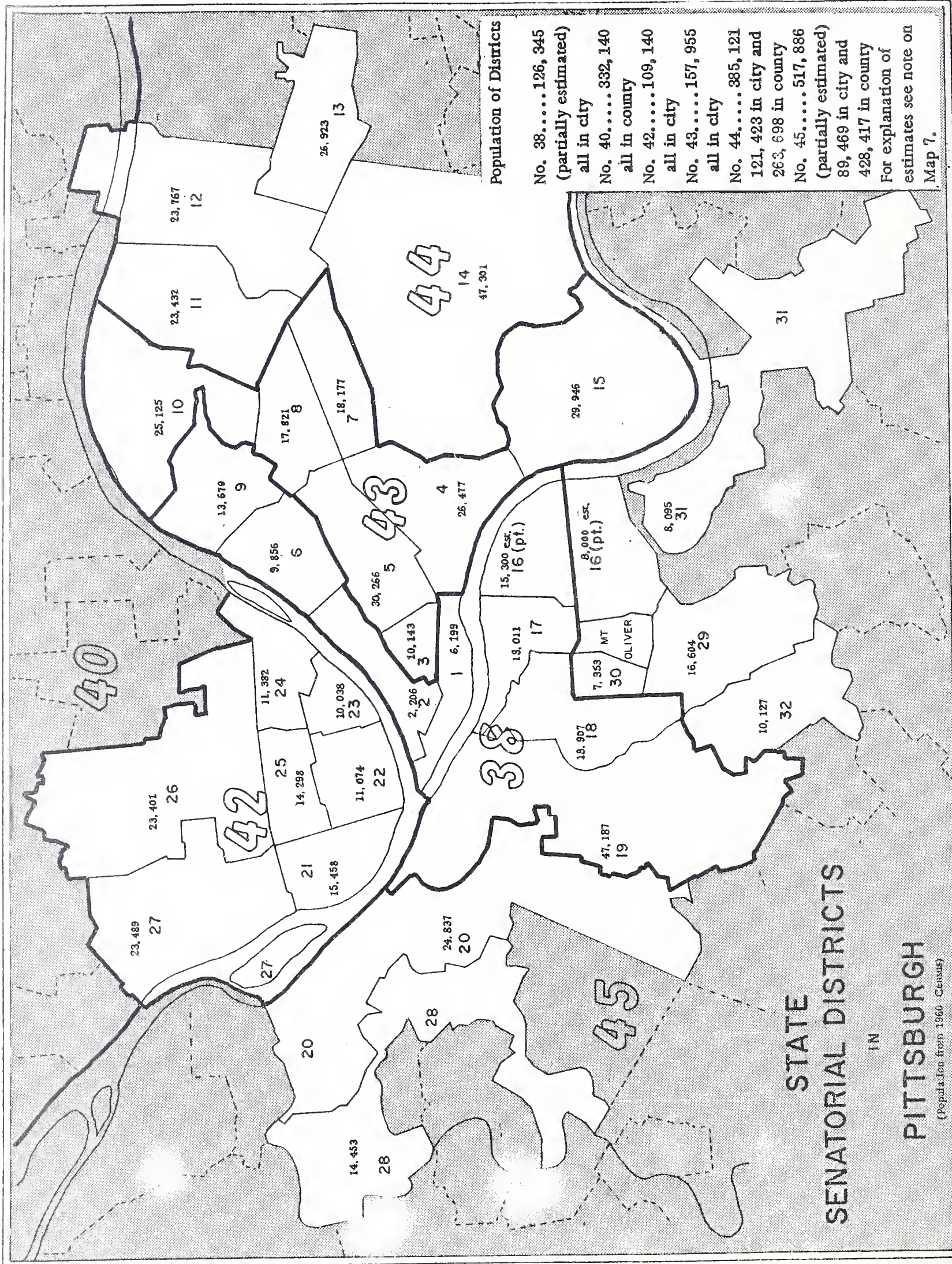




TABLE 2: STATISTICS ON STATE SENATORIAL APPORTIONMENT AND REPRESENTATION IN PENNSYLVANIA

(There are 50 districts and every district has one senator)

District number	Counties or area in present district	District population				Amount over or under state average population per district of 226,387, based on 1960 census ("-" means under)		1960 district population in decimal relation to one ratio (One ratio, 226,387, equals 1.00) (1)
		1950 census	1960 census	Absolute change	Percentage change ("-" means decrease)	Number	Percentage	
	Total, the state	10,498,012	11,319,366					
	Philadelphia, total	2,071,605	2,002,512	69,093	-3.3			
1	Wards 1, 26, 36, 39, 48	240,262	209,546	-30,716	-12.8	-16,841	-7.4	0.93
2	Wards 2, 3, 4, 7, 8, 9, 30	105,389	81,095	-24,294	-23.1	-145,292	-64.2	0.36
3	Wards 5, 6, 10, 11, 12, 13, 14, 16, 18	79,063	51,793	-27,270	-34.5	-174,594	-77.1	0.23
4	Wards 24, 27, 34, 40, 44, 46, 51, 52	440,143	402,161	-37,982	-8.6	175,774	77.6	1.78
5	Wards 17, 19, 20, 31, 37	139,006	112,754	-26,252	-18.9	-113,633	-50.2	0.50
6	Wards 21, 22, 38, 42, 49, 50, 59 (Ward 59 was created out of the 22nd ward in 1959)	406,677	421,052	14,375	3.5	194,665	86.0	1.86
7	Wards 15, 28, 29, 32, 47	218,549	200,584	-17,965	-8.2	-25,803	-11.4	0.89
8	Wards 23, 25, 33, 35, 41, 43, 45, 53, 54, 55, 56, 57, 58 (Wards 53-58 were created out of the 35th ward in 1957)	442,516	523,527	81,011	18.3	297,140	131.3	2.31
9	Delaware	414,234	553,154	138,920	33.5	326,767	144.3	2.44
10	Bucks	144,620	308,567	163,947	113.4	82,180	36.3	1.36
11	Berks	255,740	275,414	19,674	7.7	49,027	21.7	1.22
12	Montgomery	353,068	516,682	163,614	46.3	290,295	128.2	2.28
13	All that part of county of Lancaster not included in 17th district	153,913	182,366	28,453	18.5	-44,021	-19.4	0.81
14	Carbon, Monroe, Pike, and Wayne	128,234	129,851	1,617	1.3	-96,536	-42.6	0.57
15	Dauphin	197,784	220,255	22,471	11.4	-6,132	-2.7	0.97
16	Lehigh	198,207	227,536	29,329	14.8	1,149	0.5	1.01
17	Lebanon county and boroughs and townships in Lancaster county as listed in footnote(2)	162,487	186,846	24,359	15.0	-39,541	-17.5	0.83
18	Northampton	185,243	201,412	16,169	8.7	-24,975	-11.0	0.89
19	Chester	159,141	210,608	51,467	32.3	-15,779	-7.0	0.93
20	Townships and boroughs of Luzerne county as listed in footnote (3)	184,626	169,624	-15,002	-8.1	-56,763	-25.1	0.75
21	The residue of the county of Luzerne not included in the 20th district	207,615	177,348	-30,267	-14.6	-49,039	-21.7	0.78
22	Lackawanna	257,396	234,531	-22,865	-8.9	8,144	3.6	1.04
23	Bradford, Susquehanna, and Wyoming	100,458	104,875	4,417	4.4	-121,512	-53.7	0.46
24	Columbia, Lycoming, Montour, and Sullivan	177,455	185,837	8,382	4.7	-40,550	-17.9	0.82
25	McKean, Potter, and Tioga	108,891	107,614	-1,277	-1.2	-118,773	-52.5	0.48
26	Cameron, Clarion, Clinton, Elk, and Forest	121,346	124,426	3,080	2.5	-101,961	-45.0	0.55
27	Northumberland, Snyder, and Union	163,177	155,706	-7,471	-4.6	-70,681	-31.2	0.69
28	York	202,737	238,336	35,599	17.6	11,949	5.3	1.05
29	Schuylkill	200,577	173,027	-27,550	-13.7	-53,360	-23.6	0.76
30	Blair and Huntingdon	180,386	176,727	-3,659	-2.0	-49,660	-21.9	0.78
31	Cumberland, Juniata, Mifflin, and Perry	178,173	211,620	33,447	18.8	-14,767	-6.5	0.93
32	Fayette	189,899	169,340	-20,559	-10.8	-57,047	-25.2	0.75
33	Adams and Franklin	120,124	140,078	19,954	16.6	-86,309	-38.1	0.62
34	Centre and Clearfield	151,879	160,114	8,235	5.4	-66,273	-29.3	0.71
35	Cambria	209,541	203,283	-6,258	-3.0	-23,104	-10.2	0.90
36	Bedford, Fulton, and Somerset	132,975	130,498	-2,477	-1.9	-95,889	-42.4	0.58
37	Indiana and Jefferson	126,253	122,158	-4,095	-3.2	-104,229	-46.0	0.54
38	Wards 1, 2, 6, 9, part of 16, 17, 18, and 19 in Pittsburgh, Allegheny county (4)	143,423	126,345	-17,078	-11.9	-100,042	-44.2	0.56

(1) This ratio, as defined by Article II, Section 16, of the Pennsylvania Constitution, is one-fiftieth of the state population and equals the state average population per district.

(2) Included in the 17th senatorial district are the boroughs of Adamstown, Akron, Columbia, Denver, Elizabethtown, Ephrata, Lititz, Manheim, Marietta, Mount Joy, and Mountville; and the townships of Clay, Conoy, East Cocalico, East Donegal, Elizabeth, Ephrata, Mount Joy, Penn, Rapho, Warwick, West Cocalico, West Donegal, and West Hempfield in the county of Lancaster.

(3) In the 20th senatorial district are the townships of Black Creek, Butler, Conyngham, Dallas, Dennison, Dorrance, Foster, Fairmount, Fairview, Hazle, Hollenback, Hunlock, Huntington, Lake, Lehman, Jackson, Kingston, Nescopeck, Plymouth, Ross, Salem, Slocum, Sugarloaf, Union, and Wright; and the boroughs of Conyngham, Courtdale, Dallas, Edwardsville, Forty Fort, Freeland, Jeddo, Kingston, Larksville, Nanticoke, Nescopeck, New Columbus, Nuangola, Plymouth, Shickshinny, West Hazleton, and White Haven; and the city of Hazleton in the county of Luzerne, (Dorrancetown, formerly a separate borough in District 20, was annexed to Kingston Borough.)

(4) On the basis of the number of election districts (which are of roughly equal proportions), approximately two-thirds of the 16th ward's population is estimated to be in senatorial district 38, the other third in district 45. The 23,300 population of 1960 is therefore allotted in this way: 15,300 to the part of the ward that is in the 38th district, and 8,000 to the part of the ward that is in the 45th district. The 1950 population of the 16th ward, 24,538, is allotted thus: 16,538 to the 38th district and 8,000 to the 45th district.

Parts of two election districts of the 18th ward, the 1st and 11th, are in the 45th, not the 38th senatorial district; but the ward's entire population is credited to the 38th district because election-district populations are not known, and the population of only part of two such districts is not a significant proportion of the whole ward's. (The combined population of the parts of the two districts in point is not estimated to be more than 950-1,200 in either 1950 or 1960.)

(Continued on next page)

TABLE 2: STATISTICS ON STATE SENATORIAL APPORTIONMENT AND REPRESENTATION IN PENNSYLVANIA (Continued)  
(There are 50 districts and every district has one senator)

District number	Counties or area in present district	District population				Amount over or under state average population per district of 226, 387, based on 1960 census ("-" means under)		1960 district population in decimal relation to one ratio (One ratio, 226, 387, equals 1.00) (1)
		1950 census	1960 census	Absolute change ("-" means decrease)	Percentage change	Number	Percentage	
39	Westmoreland	313, 179	352, 629	39, 450	12.6	126, 242	55.8	1.56
40	Boroughs and townships in Allegheny county as listed in footnote (5)	262, 306	332, 140	69, 834	26.6	105, 753	46.7	1.47
41	Armstrong and Butler	178, 162	194, 163	16, 001	9.0	-32, 224	-14.2	0.86
42	Wards 21, 22, 23, 24, 25, 26, and 27 in city of Pittsburgh, Allegheny county (6)	132, 109	109, 140	-22, 969	-17.4	-117, 247	-51.8	0.48
43	Wards 3, 4, 5, 7, 8, 10, and 15 in city of Pittsburgh, Allegheny county	186, 725	157, 955	-28, 770	-15.4	-68, 432	-30.2	0.70
44	Wards 11, 12, 13, and 14 in city of Pittsburgh in addition to territory shown in footnote (7)	371, 035	385, 121	14, 086	3.8	158, 734	70.1	1.70
45	Part of ward 16 and wards 20, 28, 29, 30, 31, and 32 in city of Pittsburgh in addition to territory shown in footnote (8)	419, 639	517, 886	98, 247	23.4	291, 499	128.8	2.29
46	Greene and Washington	255, 022	256, 695	1, 673	0.7	30, 308	13.4	1.13
47	Beaver and Lawrence	280, 312	319, 913	39, 601	14.1	93, 526	41.3	1.41
48	Venango and Warren	108, 026	110, 877	2, 851	2.6	-115, 510	-51.0	0.49
49	Erie	219, 388	250, 682	31, 294	14.3	24, 295	10.7	1.11
50	Crawford and Mercer	190, 902	205, 475	14, 573	7.6	-20, 912	-9.2	0.91

(5) In the 40th senatorial district are all the boroughs and townships in that portion of Allegheny County lying north of the Ohio and Allegheny Rivers; and the boroughs of Churchill, East Pittsburgh, East McKeesport, Pitcairn, Turtle Creek, Wall, Wilmerding, Monroeville, Plum, and Braddock Hills (formerly Braddock Township); and Wilkins Township in Allegheny County.

The 40th senatorial district also includes the 10th election district of Pittsburgh's 26th ward, but that ward's entire population is credited to the 42nd senatorial district because election-district populations are not known, and this one election district's population is not a significant proportion of the whole ward's. (The 10th district's population is estimated to come to no more than 1,400-1,500 either in 1950 or 1960.)

(6) The 42nd senatorial district includes all but one election district of the 26th ward, that election district being in the 40th senatorial district. The ward's entire population is credited to senatorial district 42 for the reason given in Footnote 5 above.

(7) Also in the 44th senatorial district are the city of McKeesport and all the boroughs and townships in that portion of Allegheny County lying between the Allegheny and Monongahela Rivers not included in the 40th district.

(8) Also in the 45th senatorial district are all the boroughs and townships in that portion of Allegheny County lying south of the Ohio and Monongahela Rivers. Wards 28-32 in Pittsburgh were all created since the apportioning acts of 1921 and 1923. Wards 29-32 in that city were formerly the boroughs of Carrick, Knoxville, Hays, and Overbrook respectively.

Although the 45th senatorial district also includes part of two election districts of the 18th ward of Pittsburgh, the 1st and 11th, the entire ward's population is credited to senatorial district 38 for the reason given in Footnote 4 above.

Source: District territory derived from P. L. 449 of 1921 as amended by P. L. 106 of 1923 except for Philadelphia County, part of which was taken from footnotes to a reprint of this law shown in the 1959-60 Pennsylvania Manual, Vol. 94, and for Allegheny County, which was taken from Allegheny County Digest of Election Laws and Calendar, 1960, Allegheny County Department of Elections. Population figures are final and are taken from the 1950 and the 1960 Census of Population of the Bureau of the Census, U. S. Department of Commerce. Data compiled by the Bureau of Statistics, Department of Internal Affairs.



## PART III

### Explanation of State House of Representatives<sup>1</sup>

#### Apportionment and Districting

Besides the Constitutional condition of Article II, Section 18 requiring representative re-apportionment after every census, there are two factors bearing on the question of apportionment and representation in the State House of Representatives. The first is another part of the Constitution, this being Section 17 of the same article, titled "Representative Districts." It declares:

The members of the House of Representatives shall be apportioned among the several counties on a ratio obtained by dividing the population of the State as ascertained by the most recent United States census by two hundred. Every county containing less than five ratios shall have one representative for every full ratio, and an additional representative when the surplus exceeds half a ratio; but each county shall have at least one representative. Every county containing five ratios or more shall have one representative for every full ratio. Every city containing a population equal to a ratio shall elect separately its proportion of the representatives allotted to the county in which it is located. Every city entitled to more than four representatives, and every county having over one hundred thousand inhabitants, shall be divided into districts of compact and contiguous territory, each district to elect its proportion of representatives according to its population, but no district shall elect more than four representatives.<sup>1</sup>

The second factor, putting the above Constitutional provision into effect most recently, is Act No. 232 of 1953, P. L. 956. That statute, which divides the state into new districts that it specifically delineates, provides that "until the next decennial United States census and the apportionment . . . made thereon by law, the House of Representatives shall consist of two hundred and ten members."<sup>2</sup> The 1953 act also repeals P. L. 455 of 1921 and P. L. 2443 of 1937. Between the passage of the 1874 Constitution and the 1953 re-apportionment the House was re-apportioned in 1887, 1906, 1921, and 1937.

According to the Constitution, there is no set number of seats in the House, but membership is to be determined by the ratios, or two-hundredth parts of the population, as explained above, that the counties have. On the basis of the ratio system and as a consequence of the 1960 Census, there will apparently be a gain of 12 seats and a loss of 13 among the counties. This will mean a net loss of one seat, for a new total of 209. Incidentally, this is the same number it had after the 1937 re-apportionment.

Final 1960 Census figures show that a ratio is 56,597, half a ratio 28,298. In simple terms, here are the salient facts about the ratio method as derived from the part of the Constitution quoted above:

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<sup>1</sup> Printed on page 29 of the Pennsylvania Manual, op. cit.

<sup>2</sup> Ibid., page 91.

1. Every county must have at least one representative, regardless of its population.
2. Every county with fewer than five ratios (5/200ths, or 282,984 people) is to have one representative for every full ratio and another for every fraction of a ratio larger than one-half.
3. Every county containing five or more ratios is to have one representative for every full ratio but none for fractions of a ratio.
4. Every city with a population equal to a ratio is to elect separately its proportion of the representatives allotted to the county in which it is situated. Therefore, any such city must have a separate district.
5. Every city entitled to more than four representatives and every county of more than 100,000 people is to be divided into districts of compact and contiguous territory. Each district is to elect its proportion of representatives based on its population, but no district may elect more than four representatives. Nor must any county with over 100,000 people necessarily be divided into any more than two districts until or unless one or both of its districts are no longer adequately represented by the limit of four representatives.
6. There is no prohibition against dividing any political subdivision in the formation of districts.



## MAP 10

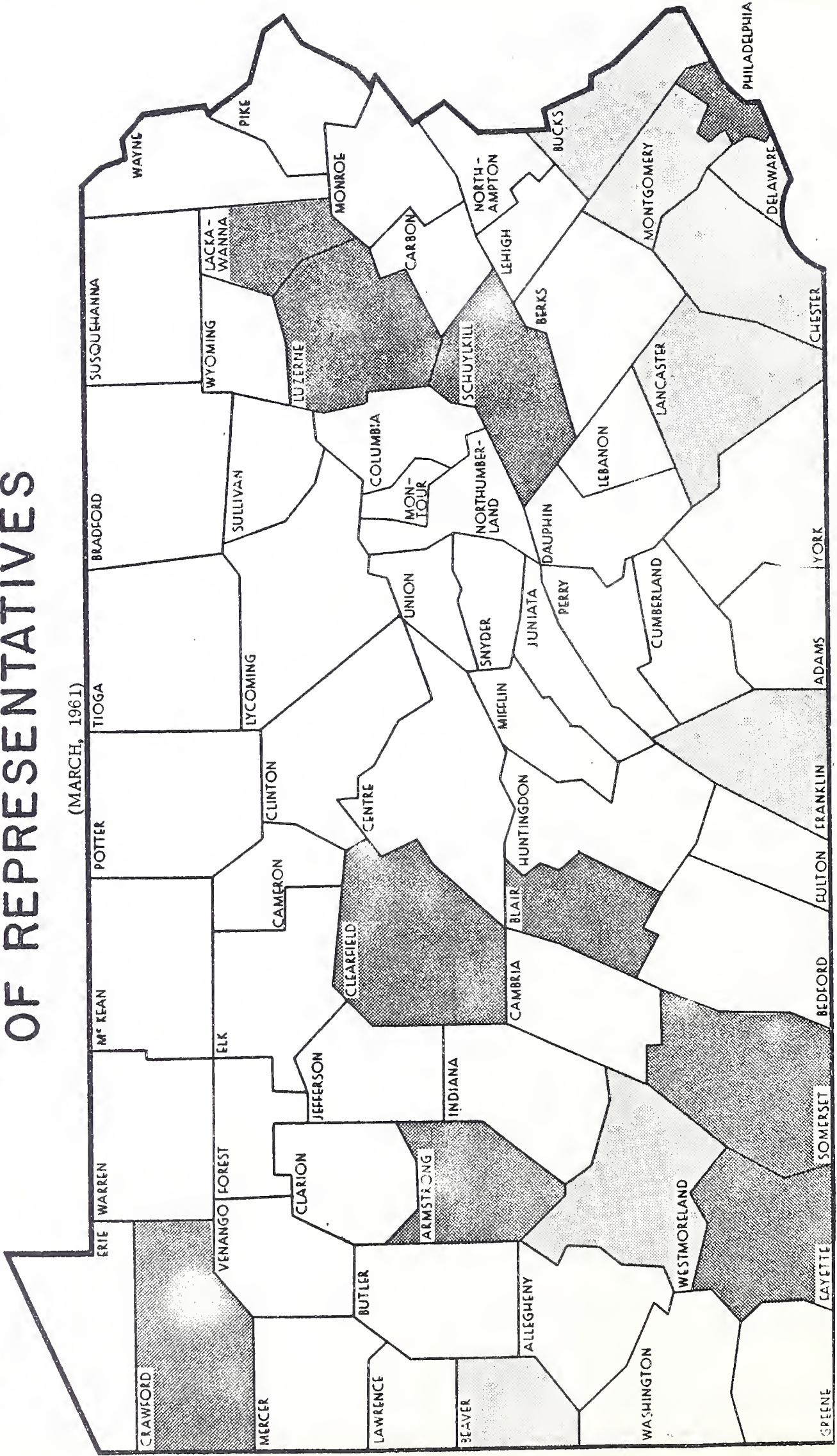
(District numbers shown in counties with more than one district)



Source: Prepared by the Bureau of Statistics, Department of Internal Affairs, from P. L. 956 of July 29, 1953, as printed in the 1950-60 Pennsylvania Manual, Vol. 94.

# PENNSYLVANIA COUNTIES SHADED ACCORDING TO DEGREE OF REPRESENTATION IN THE STATE HOUSE OF REPRESENTATIVES

(MARCH, 1961)



☒ Over represented
 ☐ Under represented
 ☐ Correctly represented

In accordance with the law on ratio representation

Source: Prepared by the Bureau of Statistics, Department of Internal Affairs, from 1960 Census results and the Pennsylvania Constitution as printed in the



MAP 12

# STATE REPRESENTATIVE DISTRICTS IN PHILADELPHIA : MARCH 1961



Source: Prepared by the Bureau of Statistics,  
Department of Internal Affairs, from the  
Philadelphia Committee of Seventy's 1961  
Election Calendar and the 1959-60  
Pennsylvania Manual, Vol. 94.

# STATE REPRESENTATIVE DISTRICTS IN PITTSBURGH: MARCH 1961



Source: Prepared by the Bureau of Statistics, Department of Internal Affairs, from County of Allegheny Digest of Election Laws and Calendar, 1960, and the 1959-60 Pennsylvania Manual, Vol. 94.



TABLE 3: COUNTY STATISTICS ON STATE HOUSE OF REPRESENTATIVES' APPORTIONMENT AND REPRESENTATION IN PENNSYLVANIA

(There are 210 seats in the House. Forty counties, holding 46 of these seats, have representatives at large. Six of the 40 have two representatives each, the others, one. The other 27 counties, divided into 114 districts, have 164 representatives from these districts.)

County	Number of districts	Number of representatives (1)	County population				Average population per representative in all districts of the county: 1960(2)	1960 county population in decimal relation to one ratio (3) (One ratio, 56,597 equals 1.00)
			1950 census	1960 census ("—" means decrease)	Absolute change	Percentage change		
Total, the state	154	210	10,498,012	11,319,366	821,354	7.8		200.00
Adams	1	1	44,197	51,906	7,709	17.4	51,906	0.92
Allegheny	17	28	1,515,237	1,628,587	113,350	7.5	58,164	28.78
Armstrong	1	2	80,842	79,524	-1,318	-1.6	39,762	1.41
Beaver	2	3	175,192	206,948	31,756	18.1	68,983	3.66
Bedford	1	1	40,775	42,451	1,676	4.1	42,451	0.75
Berks	4	5	255,740	275,414	19,674	7.7	55,083	4.87
Blair	2	3	139,514	137,270	-2,244	-1.6	45,757	2.43
Bradford	1	1	51,722	54,925	3,203	6.2	54,925	0.97
Bucks	2	3	144,620	308,567	163,947	113.4	102,856	5.45
Butler	1	2	97,320	114,639	17,319	17.8	57,320	2.03
Cambria	2	4	209,541	203,283	-6,258	-3.0	50,821	3.59
Cameron	1	1	7,023	7,586	563	8.0	7,586	0.13
Carbon	1	1	57,558	52,889	-4,669	-8.1	52,889	0.93
Centre	1	1	65,922	78,580	12,658	19.2	78,580	1.39
Chester	2	3	159,141	210,608	51,467	32.3	70,203	3.72
Clarion	1	1	38,344	37,408	-936	-2.4	37,408	0.66
Clearfield	2	2	85,957	81,534	-4,423	-5.1	40,767	1.44
Clinton	1	1	36,532	37,619	1,087	3.0	37,619	0.66
Columbia	1	1	53,460	53,489	29	0.1	53,489	0.95
Crawford	1	2	78,948	77,956	-992	-1.3	38,978	1.38
Cumberland	1	2	94,457	124,816	30,359	32.1	62,408	2.21
Dauphin	2	4	197,784	220,255	22,471	11.4	55,064	3.89
Delaware	3	7	414,234	553,154	138,920	33.5	79,022	9.77
Elk	1	1	34,503	37,328	2,825	8.2	37,328	0.66
Erie	3	4	219,388	250,682	31,294	14.3	62,670	4.43
Fayette	2	4	189,899	169,340	-20,559	-10.8	42,335	2.99
Forest	1	1	4,944	4,485	-459	-9.3	4,485	0.08
Franklin	1	1	75,927	88,172	12,245	16.1	88,172	1.56
Fulton	1	1	10,387	10,597	210	2.0	10,597	0.19
Greene	1	1	45,394	39,424	-5,970	-13.2	39,424	0.70
Huntingdon	1	1	40,872	39,457	-1,415	-3.5	39,457	0.70
Indiana	1	1	77,106	75,366	-1,740	-2.3	75,366	1.33
Jefferson	1	1	49,147	46,792	-2,355	-4.8	46,792	0.83
Juniata	1	1	15,243	15,874	631	4.1	15,874	0.28
Lackawanna	5	5	257,396	234,531	-22,865	-8.9	46,906	4.14
Lancaster	2	4	234,717	278,359	43,642	18.6	69,590	4.92
Lawrence	2	2	105,120	112,965	7,845	7.5	56,482	2.00
Lebanon	1	2	81,683	90,853	9,170	11.2	45,426	1.61
Lehigh	2	4	198,207	227,536	29,329	14.8	56,884	4.02
Luzerne	7	7	392,241	346,972	-45,269	-11.5	49,567	6.13
Lycoming	2	2	101,249	109,367	8,118	8.0	54,684	1.93
McKean	1	1	56,607	54,517	-2,090	-3.7	54,517	0.96
Mercer	2	2	111,954	127,519	15,565	13.9	63,760	2.25
Mifflin	1	1	43,691	44,348	657	1.5	44,348	0.78
Monroe	1	1	33,773	39,567	5,794	17.2	39,567	0.70
Montgomery	3	6	353,068	516,682	163,614	46.3	86,114	9.13
Montour	1	1	16,001	16,730	729	4.6	16,730	0.30
Northampton	2	4	185,243	201,412	16,169	8.7	50,353	3.56
Northumberland	2	2	117,115	104,138	-12,977	-11.1	52,069	1.84
Perry	1	1	24,782	26,582	1,800	7.3	26,582	0.47
Philadelphia	31	39	2,071,605	2,002,512	-69,093	-3.3	51,346	35.38
Pike	1	1	8,425	9,158	733	8.7	9,158	0.16
Potter	1	1	16,810	16,483	-327	-1.9	16,483	0.29
Schuylkill	2	4	200,577	173,027	-27,550	-13.7	43,257	3.06
Snyder	1	1	22,912	25,922	3,010	13.1	25,922	0.46
Somerset	1	2	81,813	77,450	-4,363	-5.3	38,725	1.37
Sullivan	1	1	6,745	6,251	-494	-7.3	6,251	0.11
Susquehanna	1	1	31,970	33,137	1,167	3.7	33,137	0.59
Tioga	1	1	35,474	36,614	1,140	3.2	36,614	0.65
Union	1	1	23,150	25,646	2,496	10.8	25,646	0.45
Venango	1	1	65,328	65,295	-33	-0.1	65,295	1.15
Warren	1	1	42,698	45,582	2,884	6.8	45,582	0.81
Washington	2	4	209,628	217,271	7,643	3.6	54,318	3.84
Wayne	1	1	28,478	28,237	-241	-0.8	28,237	0.50
Westmoreland	3	5	313,179	352,629	39,450	12.6	70,526	6.23
Wyoming	1	1	16,766	16,813	47	0.3	16,813	0.30
York	4	4	202,737	238,336	35,599	17.6	59,584	4.21

(1) On the basis of the 1960 census there is an average of 3.13 representatives per county in the whole state.

(2) State average population in 1960 per representative is 53,902.

(3) According to the State Constitution, House representation is to be founded on the number of ratios of 200th parts of the total state population that every county has. This ratio, based on the 1960 census, is 56,597. But every county is to have at least one representative, regardless of its population. For a complete explanation of the ratio system and the laws governing apportionment of the House of Representatives, see the explanation of representative apportionment on page 17.

Source: Compiled by the Bureau of Statistics, Department of Internal Affairs, from "Advance Reports, Final Population Counts: Pennsylvania," 1960 Census of Population, PC(A1)-40, U. S. Department of Commerce, Bureau of the Census, November 28, 1960; Census of Population, 1950, Vol. II, "Characteristics of the Population, Part 38, Pennsylvania," U. S. Department of Commerce, Bureau of the Census, 1952. Article 11, Section 17 of the Pennsylvania Constitution and P. L. 956 of July 29, 1953, as printed in the 1959-60 Pennsylvania Manual, Vol. 94, Pennsylvania Department of Property and Supplies; and the 1959 Pennsylvania Legislative Directory, prepared by Edward B. Watson of the Senate of Pennsylvania and Joseph Ominsky of the House of Representatives.

TABLE 4: STATISTICS ON STATE HOUSE OF REPRESENTATIVES' DISTRICTS IN PENNSYLVANIA

(Please note that the last two columns show the deviations of individual district populations from the state average population per district, 73,502--obtained by dividing 11,319,366 by 154. See Table 5 for the deviations of population per representative among the districts from the state average population per representative.)

County of district location <sup>(1)</sup>	District number (2)	Number of representatives in district	District population				Amount over or under state average population per district of 73,502 - 1960(3)	
			1950 census	1960 census	Absolute change ("-" means decrease)	Percentage change	Number ("-" means under)	Percent
State, total	154	210	10,498,012	11,319,366	821,354	7.8		
Adams	-	1	44,197	51,906	7,709	17.4	-21,596	-29.4
Allegheny	1	2	120,387	96,385	-24,002	-19.9	22,883	31.1
(County totals:	2	1	40,019	29,883	-10,136	-25.3	-43,619	-59.3
1950-1,515,237	3	1	42,477	38,804	-3,673	-8.6	-34,698	-47.2
1960-1,628,587)	4	1	45,619	41,609	-4,010	-8.8	-31,893	-43.4
	5	1	55,741	50,690	-5,051	-9.1	-22,812	-31.0
	6	1	47,316	47,301	-15	-0.03	-26,201	-35.6
	7	1	40,198	38,041	-2,157	-5.4	-35,461	-48.2
	8	1	53,441	45,251	-8,190	-15.3	-28,251	-38.4
	9	1	68,561	73,918	5,357	7.8	416	0.6
	10	1	57,879	54,748	-3,131	-5.4	-18,754	-25.5
	11	1	60,993	46,792	-14,201	-23.3	-26,710	-36.3
	12	1	50,821	46,890	-3,931	-7.7	-26,612	-36.2
	13	1	53,033	45,489	-7,544	-14.2	-28,013	-38.1
	14	2	105,951	120,412	14,461	13.6	46,910	63.8
	15	4	221,890	302,025	80,135	36.1	228,523	310.9
	16	4	245,430	297,862	52,432	21.4	224,360	305.2
	17	4	205,481	252,487	47,006	22.9	178,985	243.5
Armstrong	-	2	80,842	79,524	-1,318	-1.6	6,022	8.2
Beaver	1	1	67,888	76,152	8,264	12.2	2,650	3.6
	2	2	107,304	130,796	23,492	21.9	57,294	77.9
Bedford	-	1	40,775	42,451	1,676	4.1	-31,051	-42.2
Berks	1	2	109,320	98,177	-11,143	-10.2	24,675	33.6
	2	1	49,504	59,639	10,135	20.5	-13,863	-18.9
	3	1	46,999	56,817	9,818	20.9	-16,685	-22.7
	4	1	49,917	60,781	10,864	21.8	-12,721	-17.3
Blair	1	2	77,177	69,407	-7,770	-10.1	-4,095	-5.6
	2	1	62,337	67,863	5,526	8.9	-5,639	-7.7
Bradford	-	1	51,722	54,925	3,203	6.2	-18,577	-25.3
Bucks	1	2	100,611	169,274	68,663	68.2	95,772	130.3
	2	1	44,009	139,293	95,284	216.5	65,791	89.5
Butler	-	2	97,320	114,639	17,319	17.8	41,137	56.0
Cambria	1	1	66,542	56,756	-9,786	-14.7	-16,746	-22.8
	2	3	142,999	146,527	3,528	2.5	73,025	99.4
Cameron	-	1	7,023	7,586	563	8.0	-65,916	-89.7
Carbon	-	1	57,558	52,889	-4,669	-8.1	-20,613	-28.0
Centre	-	1	65,922	78,580	12,658	19.2	5,078	6.9
Chester	1	1	43,739	49,034	5,295	12.1	-24,468	-33.3
	2	2	115,402	161,574	46,172	40.0	88,072	119.8
Clarion	-	1	38,344	37,408	-936	-2.4	-36,094	-49.1
Clearfield	1	1	45,698	44,853	-845	-1.8	-28,649	-39.0
	2	1	40,259	36,681	-3,578	-8.9	-36,821	-50.1
Clinton	-	1	36,532	37,619	1,087	3.0	-35,883	-48.8
Columbia	-	1	53,460	53,489	29	0.05	-20,013	-27.2
Crawford	-	2	78,948	77,956	-992	-1.3	4,454	6.1
Cumberland	-	2	94,457	124,816	30,359	32.1	51,314	69.8
Dauphin	1	2	89,544	79,697	-9,847	-11.0	6,195	8.4
	2	2	108,240	140,558	32,318	29.9	67,056	91.2
Delaware	1	1	66,039	63,658	-2,381	-3.6	-9,844	-13.4
	2	2	120,165	129,391	9,226	7.7	55,889	76.0
	3	4	228,030	360,105	132,075	57.9	286,603	389.9
Elk	-	1	34,503	37,328	2,825	8.2	-36,174	-49.2
Erie	1	1	59,740	60,627	887	1.5	-12,875	-17.5
	2	1	71,063	77,813	6,750	9.5	4,311	5.9
	3	2	88,585	112,242	23,657	26.7	38,740	52.7

(1) There are 154 districts in the 67 counties, including 40 districts made up of whole counties. For district territory descriptions see pages 181-186 of the 1959-60 Pennsylvania Manual, except for Allegheny County districts, for which see County of Allegheny Digest of Election Laws and Calendar, 1960.

(2) A dash (-) signifies that the whole county comprises one district and that therefore it has no number.

(3) See headnote.

(Continued on next page)

TABLE 4: STATISTICS ON STATE HOUSE OF REPRESENTATIVES' DISTRICTS IN PENNSYLVANIA (Continued)

(Please note that the last two columns show the deviations of individual district populations from the state average population per district 73,502--obtained by dividing 11,319,366 by 154. See Table 5 for the deviations of population per representative among the districts from the state average population per representative.)

County of district location (1)	District number (2)	Number of representatives in district	District population				Amount over or under state average population per district of 73,502-1960 <sup>(3)</sup>	
			1950 census	1960 census	Absolute change ("-" means decrease)	Percentage change	Number ("-" means under)	Percent
Fayette	1	1	47,352	39,447	-7,905	-16.7	-34,055	-46.3
	2	3	142,547	129,893	-12,654	-8.9	56,391	76.7
Forest	-	1	4,944	4,485	-459	-9.3	-69,017	-93.9
Franklin	-	1	75,927	88,172	12,245	16.1	14,670	20.0
Fulton	-	1	10,387	10,597	210	2.0	-62,905	-85.6
Greene	-	1	45,394	39,424	-5,970	-13.2	-34,078	-46.4
Huntingdon	-	1	40,872	39,457	-1,415	-3.5	-34,045	-46.3
Indiana	-	1	77,106	75,366	-1,740	-2.3	1,864	2.5
Jefferson	-	1	49,147	46,792	-2,355	-4.8	-26,710	-36.3
Juniata	-	1	15,243	15,874	631	4.1	-57,628	-78.4
Lackawanna	1	1	60,994	55,074	-5,920	-9.7	-18,428	-25.1
	2	1	64,542	56,369	-8,173	-12.7	-17,133	-23.3
	3	1	42,161	37,251	-4,910	-11.6	-36,251	-49.3
	4	1	46,040	39,537	-6,503	-14.1	-33,965	-46.2
	5	1	43,659	46,300	2,641	6.0	-27,202	-37.0
Lancaster	1	1	63,774	61,055	-2,719	-4.3	-12,447	-16.9
	2	3	170,943	217,304	46,361	27.1	143,802	195.6
Lawrence	1	1	48,834	44,790	-4,044	-8.3	-28,712	-39.1
	2	1	56,286	68,175	11,889	21.1	-5,327	-7.2
Lebanon	1	2	81,683	90,853	9,170	11.2	17,351	23.6
Lehigh	1	2	106,756	108,347	1,591	1.5	34,845	47.4
	2	2	91,451	119,189	27,738	30.3	45,687	62.2
Luzerne	1	1	61,504	53,746	-7,758	-12.6	-19,756	-26.9
	2	1	47,629	44,856	-2,773	-5.8	-28,646	-39.0
	3	1	52,548	45,048	-7,500	-14.3	-28,454	-38.7
	4	1	47,889	40,982	-6,907	-14.4	-32,520	-44.2
	5	1	50,609	43,546	-7,063	-14.0	-29,956	-40.8
	6	1	55,236	55,243	7	0.01	-12,259	-24.8
	7	1	76,826	63,551	-13,275	-17.3	-9,951	-13.5
Lycoming	1	1	50,582	51,014	432	0.9	-22,488	-30.6
	2	1	50,667	58,353	7,686	15.2	-15,149	-20.6
McKean	-	1	56,607	54,517	-2,090	-3.7	-18,985	-25.8
Mercer	1	1	59,618	63,848	4,230	7.1	-9,654	-13.1
	2	1	52,336	63,671	11,335	21.7	-9,831	-13.4
Mifflin	-	1	43,691	44,348	657	1.5	-29,154	-39.7
Monroe	-	1	33,773	39,567	5,794	17.2	-33,935	-46.2
Montgomery	1	1	54,152	64,529	10,377	19.2	-8,973	-12.2
	2	1	62,032	76,729	14,697	23.7	3,227	4.4
	3	4	236,884	375,424	138,540	58.5	301,922	410.8
Montour	-	1	16,001	16,730	729	4.6	-56,772	-77.2
Northampton	1	1	52,536	55,325	2,789	5.3	-18,177	-24.7
	2	3	132,707	146,087	13,380	10.1	72,585	98.8
Northumberland	1	1	63,300	50,422	-12,878	-20.3	-23,080	-31.4
	2	1	53,815	53,716	-99	-0.2	-19,786	-26.9
Perry	-	1	24,782	26,582	1,800	7.3	-46,920	-63.8
Philadelphia	1	1	66,666	59,203	-7,463	-11.2	-14,299	-19.5
(County totals:	2	1	52,845	38,917	-13,928	-26.4	-34,585	-47.1
1950-2,071,605	3	2	88,317	78,925	-9,392	-10.6	5,423	7.4
1960-2,002,512)	4	1	52,786	45,306	-7,480	-14.2	-28,196	-38.4
	5	2	90,361	70,022	-20,339	-22.5	-3,480	4.7
	6	1	45,112	28,480	-16,632	-36.9	-45,022	-61.3
	7	1	49,817	42,284	-7,533	-15.1	-31,218	-42.5
	8	1	53,479	39,275	-14,204	-26.6	-34,227	-46.6
	9	1	58,412	48,953	-9,459	-16.2	-24,549	-33.4
	10	1	67,027	59,483	-7,544	-11.3	-14,019	-19.1
	11	1	60,860	54,497	-6,363	-10.5	-19,005	-25.9
	12	1	50,775	50,616	-159	-0.3	-22,886	-31.1
	13	2	98,120	92,326	-5,794	-5.9	18,824	25.6
	14	1	41,409	42,761	1,352	3.3	-30,741	-41.8
	15	2	114,197	113,880	-317	-0.3	40,378	54.9
	16	1	67,311	86,026	18,715	27.8	12,524	17.0
	17	1	53,593	51,234	-2,359	-4.4	-22,268	-30.3
	18	1	53,651	53,563	-88	-0.2	-19,939	-27.1
	19	1	47,384	42,233	-5,151	-10.9	-31,269	-42.5
	20	1	66,928	65,622	-1,306	-2.0	-7,880	-10.7
	21	2	94,467	83,313	-11,154	-11.8	9,811	13.3
	22	1	51,839	46,800	-5,039	-9.7	-26,702	-36.3
	23	3	148,458	241,676	93,218	62.8	168,174	228.8
	24	1	57,648	64,956	7,308	12.7	-8,546	-11.6
	25	1	63,391	57,987	-5,404	-8.5	-15,515	-21.1

(Continued on next page)



TABLE 4: STATISTICS ON STATE HOUSE OF REPRESENTATIVES' DISTRICTS IN PENNSYLVANIA (Continued)

(Please note that the last two columns show the deviations of individual district populations from the state average population per district 73,502--obtained by dividing 11, 319, 366 by 154. See Table 5 for the deviations of population per representative among the districts from the state average population per representative.)

County of district location (1)	District number (2)	Number of representatives in district	District population				Amount over or under state average population per district of 73,502-1960 (3)	
			1950 census	1960 census	Absolute change ("-" means decrease)	Percentage change	Number ("-" means under)	Percent
	26	1	41,552	36,459	-5,093	-12.3	-37,043	-50.4
	27	1	56,372	52,246	-4,126	-7.3	-21,256	-28.9
	28	1	50,695	50,896	201	0.4	-22,606	-30.8
	29	1	75,371	66,443	-8,928	-11.8	-7,059	-9.6
	30	2	88,206	80,623	-7,583	-8.6	7,121	9.7
	31	1	64,556	57,507	-7,049	-10.9	-15,995	-21.8
Pike	-	1	8,425	9,158	733	8.7	-64,344	-87.5
Potter	-	1	16,810	16,483	-327	-1.9	-57,019	-77.6
Schuylkill	1	2	101,685	82,652	-19,033	-18.7	9,150	12.4
	2	2	98,892	90,375	-8,517	-8.6	16,873	23.0
Snyder	-	1	22,912	25,922	3,010	13.1	-47,580	-64.7
Somerset	-	2	81,813	77,450	-4,363	-5.3	3,948	5.4
Sullivan	-	1	6,745	6,251	-494	-7.3	-67,251	-91.5
Susquehanna	-	1	31,970	33,137	1,167	3.7	-40,365	-54.9
Tioga	-	1	35,474	36,614	1,140	3.2	-36,888	-50.2
Union	-	1	23,150	25,646	2,496	10.8	-47,856	-65.1
Venango	-	1	65,328	65,295	-33	-0.05	-8,207	-11.2
Warren	-	1	42,698	45,582	2,884	6.8	-27,920	-38.0
Washington	1	2	104,473	108,030	3,557	3.4	34,528	47.0
	2	2	105,155	109,241	4,086	3.9	35,739	48.6
Wayne	-	1	28,478	28,237	-241	-0.8	-45,265	-61.6
Westmoreland	1	1	57,684	61,895	4,211	7.3	-11,607	-15.8
	2	2	127,598	150,893	23,295	18.3	77,391	105.3
	3	2	127,897	139,841	11,944	9.3	66,339	90.3
Wyoming	-	1	16,766	16,813	47	0.3	-56,689	-77.1
York	1	1	59,953	54,504	-5,449	-9.1	-18,998	-25.8
	2	1	44,939	64,774	19,835	44.1	-8,728	-11.9
	3	1	46,411	57,176	10,765	23.2	-16,326	-22.2
	4	1	51,434	61,882	10,448	20.3	-11,620	-15.8

Source: Compiled by the Bureau of Statistics, Department of Internal Affairs, from "Advance Reports, Final Population Counts: Pennsylvania," 1960 Census of Population, PC(A1)-40, November 28, 1960, and "Characteristics of the Population, Part 38, Pennsylvania," Census of Population: 1950, Vol. II, 1952, of the U. S. Department of Commerce, Bureau of the Census; P. L. 956 of July 29, 1953, as printed in the 1959-60 Pennsylvania Manual, Vol. 94, Pennsylvania Department of Property and Supplies; County of Allegheny Digest of Election Laws and Calendar, 1960, Allegheny County Department of Elections; and the 1959 Pennsylvania Legislative Directory, prepared by Edward B. Watson of the Senate of Pennsylvania and Joseph Ominsky of the House of Representatives.

TABLE 5: STATISTICS ON STATE HOUSE REPRESENTATIVES IN PENNSYLVANIA

( Please note that the next-to-last two columns show the deviations of population per representative in the individual districts from the state average population per representative, 53,902--obtained by dividing 11,319,366 by 210. See Table 4 for the deviations of district populations from the state average population per district.)

County of district location	(1) District number (2)	Number of representatives in district	District population per representative				Amount over or under state average population per representative of 53,902 - 1960 (3)		1960 district population per representative in decimal relation to one ratio
			On basis of		Absolute change  (“-” means decrease)	Percentage change			
			1950 census	1960 census			Number ("—" means under)	Percent	
State total	154	210	49,991	53,902	3,911	7.8			0.95
Adams	-	1	44,197	51,906	7,709	17.4	-1,996	-3.7	0.92
Allegheny	1	2	60,194	48,193	12,001	-19.9	-5,709	-10.6	0.85
(County totals: 1950-1,515,237	2	1	40,019	29,883	-10,136	-25.3	-24,019	-44.6	0.53
1960-1,628,587)	3	1	42,477	38,804	-3,673	-8.6	-15,098	-28.0	0.69
	4	1	45,619	41,609	-4,010	-8.8	-12,293	-22.8	0.74
	5	1	55,741	50,690	-5,051	-9.1	-3,212	-6.0	0.90
	6	1	47,316	47,301	-15	-0.03	-6,601	-12.2	0.84
	7	1	40,198	38,041	-2,157	-5.4	-15,861	-29.4	0.67
	8	1	53,441	45,251	-8,190	-15.3	-8,651	-16.0	0.80
	9	1	68,561	73,918	5,357	7.8	20,016	37.1	1.31
	10	1	57,879	54,748	-3,131	-5.4	846	1.6	0.97
	11	1	60,993	46,792	-14,201	-23.3	-7,110	-13.2	0.83
	12	1	50,821	46,890	-3,931	-7.7	-7,012	-13.0	0.83
	13	1	53,033	45,489	-7,544	-14.2	-8,413	-15.6	0.80
	14	2	52,976	60,206	7,230	13.6	6,304	11.7	1.06
	15	4	55,473	75,506	20,033	36.1	21,604	40.1	1.33
	16	4	61,358	74,465	13,107	21.4	20,563	38.1	1.32
	17	4	51,370	63,122	11,752	22.9	9,220	17.1	1.12
Armstrong	-	2	40,421	39,762	-659	-1.6	-14,140	-26.2	0.70
Beaver	1	1	67,888	76,152	8,264	12.2	22,250	41.3	1.35
	2	2	53,652	65,398	11,746	21.9	11,496	21.3	1.16
Bradford	-	1	40,775	42,451	1,676	4.1	-11,451	-21.2	0.75
Berks	1	2	54,660	49,089	-5,571	-10.2	-4,813	-8.9	0.87
	2	1	49,504	59,639	10,135	20.5	5,737	10.6	1.05
	3	1	46,999	56,817	9,818	20.9	2,915	5.4	1.00
	4	1	49,917	60,781	10,864	21.8	6,879	12.8	1.07
Blair	1	2	38,589	34,704	-3,885	-10.1	-19,198	-35.6	0.61
	2	1	62,337	67,863	5,526	8.9	13,961	25.9	1.20
Bradford	-	1	51,722	54,925	3,203	6.2	1,023	1.9	0.97
Bucks	1	2	50,306	84,637	34,331	68.2	30,735	57.0	1.50
	2	1	44,009	139,293	95,284	216.5	85,391	158.4	2.46
Butler	-	2	48,660	57,319	8,659	17.8	3,417	6.3	1.01
Cambria	1	1	66,542	56,756	-9,786	-14.7	2,854	5.3	1.00
	2	3	47,666	48,842	1,176	2.5	-5,060	-9.4	0.86
Cameron	-	1	7,023	7,586	563	8.0	-46,316	-85.9	0.13
Carbon	-	1	57,558	52,889	-4,669	-8.1	-1,013	-1.9	0.93
Centre	-	1	65,922	78,580	12,658	19.2	24,678	45.8	1.39
Chester	1	1	43,739	49,034	5,295	12.1	-4,868	-9.0	0.87
	2	2	57,701	80,787	23,086	40.0	26,885	49.9	1.43
Clarion	-	1	38,344	37,408	-936	-2.4	-16,494	-30.6	0.66
Clearfield	1	1	45,698	44,853	-845	-1.8	-9,049	-16.8	0.79
	2	1	40,259	36,681	-3,578	-8.9	-17,221	-31.9	0.65
Clinton	-	1	36,532	37,619	1,087	3.0	-16,283	-30.2	0.66
Columbia	-	1	53,460	53,489	29	0.05	-413	-0.8	0.95
Crawford	-	2	39,474	38,978	-496	-1.3	-14,924	-27.7	0.69
Cumberland	-	2	47,229	62,408	15,179	32.1	8,506	15.8	1.10
Dauphin	1	2	44,772	39,849	-4,923	-11.0	-14,053	-26.1	0.70
	2	2	54,120	70,279	16,159	29.9	16,377	30.4	1.24
Delaware	1	1	66,039	63,658	-2,381	-3.6	9,756	18.1	1.12
	2	2	60,083	64,696	4,613	7.7	10,794	20.0	1.14
	3	4	57,008	90,026	33,018	57.9	36,124	67.0	1.59
Elk	-	1	34,503	37,328	2,825	8.2	-16,574	-30.7	0.66
Erie	1	1	59,740	60,627	887	1.5	6,725	12.5	1.07
	2	1	71,063	77,813	6,750	9.5	23,911	44.4	1.37
	3	2	44,292	56,121	11,829	26.7	2,219	4.1	0.99
Fayette	1	1	47,352	39,447	-7,905	-16.7	-14,455	-26.8	0.70
	2	3	47,516	43,298	-4,218	-8.9	-10,604	-19.7	0.77
Forest	-	1	4,944	4,485	-459	-9.3	-49,417	-91.7	0.08
Franklin	-	1	75,927	88,172	12,245	16.1	34,270	63.8	0.19
Greene	-	1	45,391	39,424	-5,967	-13.2	-14,478	-26.9	0.70
Huntingdon	-	1	40,872	39,457	-1,415	-3.5	-14,445	-26.8	0.70
Indiana	-	1	77,106	75,366	-1,740	-2.3	21,464	39.8	1.33
Jefferson	-	1	49,147	46,792	-2,355	-4.8	-7,110	-13.2	0.83
Juniata	-	1	15,243	15,874	631	4.1	-38,028	-70.6	0.28
Lackawanna	1	1	60,994	55,074	-5,920	-9.7	1,172	2.2	0.97
	2	1	64,542	56,369	-8,173	-12.7	2,467	4.6	1.00
	3	1	42,161	37,251	-4,910	-11.6	-16,651	-30.9	0.66
	4	1	46,040	39,537	-6,503	-14.1	-14,365	-26.7	0.70
	5	1	43,659	43,300	-359	-0.8	-7,602	-14.1	0.82
Lancaster	1	1	63,774	61,055	-2,719	-4.3	7,153	13.3	1.08
	2	3	56,981	72,435	15,454	27.1	18,533	34.4	1.28
Lawrence	1	1	48,834	44,790	-4,044	-8.3	-9,112	-16.9	0.79
	2	1	56,286	68,175	11,889	21.1	14,273	26.5	1.20
Lebanon	1	2	40,842	45,427	4,585	11.2	-8,475	-15.7	0.80
Lehigh	1	2	53,378	54,174	796	1.5	272	.5	0.96
	2	2	45,726	59,595	13,869	30.3	5,693	10.6	1.05

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TABLE 5: STATISTICS ON STATE HOUSE REPRESENTATIVES IN PENNSYLVANIA (Continued)

(Please note that the next-to-last two columns show the deviations of population per representative in the individual districts from the state average population per representative, 53,902 -- obtained by dividing 11,319,366 by 210. See Table 4 for the deviations of district populations from the state average population per district.)

County of district location (1)	District number (2)	Number of representatives in district	District population per representative				Amount over or under state average population per district of 73,502 - 1960 <sup>(3)</sup>		1960 district population per representative in decimal relation to one ratio (One ratio, 56,597 equals 1.00)
			1950 census	1960 census	Absolute change	Percentage change	Number (" - " means under)	Percent	
Luzerne	1	1	61,504	53,746	-7,758	-12.6	-156	-0.3	0.95
	2	1	47,629	44,856	-2,773	-5.8	-9,046	-16.8	0.79
	3	1	52,548	45,048	-7,500	-14.3	-8,854	-16.4	0.80
	4	1	47,889	40,982	-6,907	-14.4	-12,920	-24.0	0.72
	5	1	50,609	43,546	-7,063	-14.0	-10,356	-19.2	0.77
	6	1	55,236	55,243	7	0.01	1,341	2.5	0.98
	7	1	76,826	63,551	-13,275	-17.3	9,649	17.9	1.12
Lycoming	1	1	50,582	51,014	432	0.9	-2,888	-5.4	0.90
	2	1	50,667	58,353	7,686	15.2	4,451	8.3	1.03
McKean	-	1	56,607	54,517	-2,090	-3.7	615	1.1	0.96
	1	1	59,618	63,848	4,230	7.1	9,946	18.5	1.13
	2	1	52,336	63,671	11,335	21.7	9,769	18.1	1.12
Mifflin	-	1	43,691	44,348	657	1.5	-9,554	-17.7	0.78
Monroe	-	1	33,773	39,567	5,794	17.2	-14,335	-26.6	0.70
Montgomery	1	1	54,152	64,529	10,377	19.2	10,627	19.7	1.14
	2	1	62,032	76,729	14,697	23.7	22,827	42.3	1.36
	3	4	59,221	93,856	34,635	58.5	39,954	74.1	1.66
Montour	-	1	16,001	16,730	729	4.6	-37,172	-69.0	0.30
Northampton	1	1	52,536	55,325	2,789	5.3	1,423	2.6	0.98
	2	3	44,236	48,696	4,460	10.1	-5,206	-9.7	0.86
Northumberland	1	1	63,300	50,422	-12,878	-20.3	-3,480	-6.5	0.89
	2	1	53,815	53,716	-99	-0.2	-186	-0.3	0.95
Perry	-	1	24,782	26,582	1,800	7.3	-27,320	-50.7	0.47
Philadelphia	1	1	66,666	59,203	-7,463	-11.2	5,301	9.8	1.05
	2	1	52,845	38,917	-13,928	-26.4	-14,985	-27.8	0.69
	3	2	44,159	39,463	-4,696	-10.6	-14,439	-26.8	0.70
	4	1	52,786	45,306	-7,480	-14.2	-8,596	-15.9	0.80
	5	2	45,181	35,011	-10,170	-22.5	-18,891	-35.0	0.62
	6	1	45,112	28,480	-16,632	-36.9	-25,422	-47.2	0.50
	7	1	49,817	42,284	-7,533	-15.1	-11,618	-21.6	0.75
	8	1	53,479	39,275	-14,204	-26.6	-14,627	-27.1	0.69
	9	1	58,412	48,953	-9,459	-16.2	-4,949	-9.2	0.86
	10	1	67,027	59,483	-7,544	-11.3	5,581	10.4	1.05
	11	1	60,860	54,497	-6,363	-10.5	595	1.1	0.96
	12	1	50,775	50,616	-159	-0.3	-3,286	-6.1	0.89
	13	2	49,060	46,163	-2,897	-5.9	-7,739	-14.4	0.82
	14	1	41,409	42,761	1,352	3.3	-11,141	-20.7	0.76
	15	2	57,099	56,940	-159	-0.3	3,038	5.6	1.01
	16	1	67,311	86,026	18,715	27.8	32,124	59.6	1.52
	17	1	53,593	51,234	-2,359	-4.4	-2,668	-4.9	0.91
	18	1	53,651	53,563	-88	-0.2	-339	-0.6	0.95
	19	1	47,384	42,233	-5,151	-10.9	-11,669	-21.6	0.75
	20	1	66,928	65,622	-1,306	-2.0	11,720	21.7	1.16
	21	2	47,234	41,657	-5,577	-11.8	-12,245	-22.7	0.74
	22	1	51,839	46,800	-5,039	-9.7	-7,102	-13.2	0.83
	23	3	49,486	80,559	31,073	62.8	26,657	49.5	1.42
	24	1	57,648	64,956	7,308	12.7	11,054	20.5	1.15
	25	1	63,391	57,987	-5,404	-8.5	4,085	7.6	1.02
	26	1	41,552	36,459	-5,093	-12.3	-17,443	-32.4	0.64
	27	1	56,372	52,246	-4,126	-7.3	-1,656	-3.1	0.92
	28	1	50,695	50,896	201	0.4	-3,006	-5.6	0.90
	29	1	75,371	66,443	-8,928	-11.8	12,541	23.3	1.17
	30	2	44,103	40,312	-3,791	-8.6	-13,590	-25.2	0.71
	31	1	64,556	57,507	-7,049	-10.9	3,605	6.7	1.02
Pike	-	1	8,425	9,158	733	8.7	-44,744	-83.0	0.16
Potter	-	1	16,810	16,483	-327	-1.9	-37,419	-69.4	0.29
Schuylkill	1	2	50,843	41,326	-9,517	-18.7	-12,576	-23.3	0.73
	2	2	49,446	45,188	-4,258	-8.6	-8,714	-16.2	0.80
Snyder	-	1	22,912	25,922	3,010	13.1	-27,980	-51.9	0.46
Somerset	-	2	40,907	38,725	-2,182	-5.3	-15,177	-28.2	0.68
Sullivan	-	1	6,745	6,251	-494	-7.3	-47,651	-88.4	0.11
Susquehanna	-	1	31,970	33,137	1,167	3.7	-20,765	-38.5	0.59
Tioga	-	1	35,474	36,614	1,140	3.2	-17,288	-32.1	0.65
Union	-	1	23,150	25,646	2,496	10.8	-28,256	-52.4	0.45
Venango	-	1	65,328	65,295	-33	-0.05	11,393	21.1	1.15
Warren	-	1	42,698	45,582	2,884	6.8	-8,320	-15.4	0.81
Washington	1	2	52,237	54,015	1,778	3.4	113	0.2	0.95
	2	2	52,578	54,621	2,043	3.9	719	1.3	0.97
Wayne	-	1	28,478	28,237	-241	-0.8	-25,665	-47.6	0.50
Westmoreland	1	1	57,684	61,895	4,211	7.3	7,993	14.8	1.09
	2	2	63,799	75,447	11,648	18.3	21,545	40.0	1.33
	3	2	63,949	69,921	5,972	9.3	16,019	29.7	1.24
Wyoming	-	1	16,766	16,813	47	0.3	-37,089	-68.8	0.30
York	1	1	59,953	54,504	-5,449	-9.1	602	1.1	0.96
	2	1	44,939	64,771	19,835	44.1	10,872	20.2	1.14
	3	1	46,411	57,176	10,765	23.2	3,274	6.1	1.01
	4	1	51,434	61,882	10,448	20.3	7,980	14.8	1.09

1. For district territory descriptions see pages 181-186 of the 1959-60 Pennsylvania Manual, except for Allegheny County districts, for which see County of Allegheny Digest of Election Laws and Calendar, 1960.

2. Of the 154 districts in the 67 counties 40 are made up of whole counties and are therefore not numbered.

3. See headnote.

Source: Compiled by the Bureau of Statistics, Department of Internal Affairs, from "Advance Reports, Final Population Counts: Pennsylvania," 1960 Census of Population, PC(A1)-40, U. S. Department of Commerce, Bureau of the Census, November 28, 1960; Census of Population, 1950, Vol. II, "Characteristics of the Population, Part 38, Pennsylvania," U. S. Department of Commerce, Bureau of the Census, 1952. Article II, Section 17 of the Pennsylvania Constitution and P. L. 956 of July 29, 1953, as printed in the 1959-60 Pennsylvania Manual, Vol. 94, Pennsylvania Department of Property and Supplies; the 1959 Pennsylvania Legislative Directory, prepared by Edward B. Watson of the Senate of Pennsylvania and Joseph Ominsky of the House of Representatives; and County of Allegheny Digest of Election Laws and Calendar, 1960, Allegheny County Department of Elections.



## BIBLIOGRAPHY

A. Sources Used in This Report

"Advance Reports--Final Population Counts: Pennsylvania," 1960 Census of Population, Report No. PC(A1)-40, U. S. Department of Commerce, Bureau of the Census, November 28, 1960.

Census of Population: 1950, Vol. II, "Characteristics of the Population, Part 38, Pennsylvania," U. S. Department of Commerce, Bureau of the Census, Washington: U. S. Government Printing Office, 1952.

Jo Anne Dougherty, "Impact of the 1960 Census on Pennsylvania Governments," Internal Affairs Monthly Bulletin, Vol. 29, No. 1, January, 1961, pp. 4-7 (first of two parts).

The Pennsylvania Manual, 1959-1960, Vol. 94, Pennsylvania Department of Property and Supplies (compiled and edited by Iris Richey), 1959.

Special city ward statistics furnished the Bureau of Statistics, Department of Internal Affairs, by the Population Division of the U. S. Bureau of the Census.

Laws of the General Assembly of the Commonwealth of Pennsylvania (Pamphlet Laws), Sessions of 1921, 1923, 1937, and 1953.

"Pennsylvania Population Shifts; Pending U. S. Supreme Court Rule Make Re-apportionment Likely," Pennsylvania AFL-CIO News, December, 1960.

County of Allegheny Digest of Election Laws and Calendar, 1960, Allegheny County Department of Elections.

1961 Election Calendar, published by the Committee of Seventy, Philadelphia.

1961 Pennsylvania Legislative Directory, (preliminary edition), prepared by Mark Gruell, Jr. of the Pennsylvania Senate and Joseph Ominsky of the House of Representatives.

Special vital statistics furnished the Bureau of Statistics, Department of Internal Affairs, by the Division of Statistics and Records, Pennsylvania Department of Health.

"Population Summaries--Population of Congressional Districts," 1960 Census of Population, Series PC(P3)-1, U. S. Department of Commerce, Bureau of the Census, August, 1960.

William G. Weart, "Seat Fight Looms in Pennsylvania," New York Times, November 20, 1960.

Fred Walters, three-part series entitled respectively "Legislative Redistricting Seems Destined for Failure," "Upstate Areas Face Loss of 3 Seats in Senate under Senate Re-apportionment," and "Preliminary Figures Indicate a Gain in GOP Counties by Vote Realignment," Harrisburg Evening News, November 21, 22, and 23, 1960.

B. Other References

Lee E. Corter, Pennsylvania Ponders Apportionment (Senate Citadel Has Not Been Re-apportioned since 1921), reprinted from Temple Law Quarterly, Vol. 32, No. 3, Spring, 1959.

Walter F. Willcox, "Methods of Apportioning Seats in the House of Representatives," Journal of the American Statistical Association, Vol. 49, No. 268, December, 1954, pp. 685-695.

"Hearings before Subcommittee No. 2" on H. R. 73 and other bills dealing with congressional apportionment and districts, Committee of the Judiciary, U. S. House of Representatives, June 24 and August 19, 1959.

Congressional Redistricting, Publication No. 86, Minnesota Legislative Research Committee, St. Paul: January, 1961.

Kenneth C. Sears, Methods of Reapportionment, University of Chicago Law School, 1952.

Margaret Greenfield, Legislative Reapportionment, University of California, Bureau of Public Administration, Berkeley: March, 1951.

Margaret Greenfield, Pamela Ford, and Donald R. Emery, Legislative Reapportionment: California in National Perspective, University of California, Bureau of Public Administration, Berkeley: October, 1959.

Reapportionment of the State Legislature in Wisconsin, 1951-1954, Wisconsin Legislative Reference Library, Madison: March, 1954.

Legislative Districting and Apportionment in Alaska, Alaska Legislative Council, Juneau (Box 1349): April, 1956.

Kenneth K. Lau, Reapportionment of the Territorial Legislature, Report No. 2--1958, Hawaii University, Honolulu: 1958.

Gilbert Y. Steiner and Samuel K. Gove, The Legislature Redistricts Illinois, University of Illinois, Institute of Government and Public Affairs, Urbana: September, 1957.

John E. Juergensmeyer, edited by Alvin D. Sokolow, The Campaign for the Illinois Reapportionment Amendment, University of Illinois, Institute of Government and Public Affairs, Urbana: September, 1957.

Edwing B. McPheron and George C. Roberts, Apportionment and Reapportionment in Indiana, Indiana University, Department of Government, Bureau of Government Research, February, 1957.

Thomas Page, Legislative Apportionment in Kansas, University of Kansas Bureau of Government Research, Lawrence: 1952.

James W. Drury and James E. Titus, Legislative Apportionment in Kansas: 1960, University of Kansas, Governmental Research Center, Lawrence: 1960.

## B. Other References (Continued)

Minnesota Legislative Reapportionment, Publication No. 63, (re-issued),  
Legislative Research Committee, October, 1954.

Edward H. Hobbs, Legislative Apportionment in Mississippi, University  
of Mississippi, Bureau of Public Administration, 1956.

New Jersey Legislative Reapportionment, New Jersey State Department of  
Education, Law and Legislative Reference Bureau, Division of the  
State Library, Archives and History, Trenton: November, 1957.

Inez Bushner Gill, Legislative Apportionment and Congressional Districting  
in New Mexico, University of New Mexico, Department of Government,  
Division of Research, Albuquerque: December, 1953.

John L. Sanders, Data on North Carolina Congressional Districts, State  
Senatorial Districts, and Apportionment of the State House of Repre-  
sentatives, University of North Carolina, Institute of Government,  
Chapel Hill, 1961.

The Apportionment Problem in Oklahoma, University of Oklahoma, Bureau  
of Government Research, January, 1959.

Gordon E. Baker, The Politics of Reapportionment in Washington State,  
Eagleton Foundation, published as one of the case studies in practical  
politics, Holt, Rinehart, and Winston Co., 1960.

Claude J. Davis, Congressional Redistricting in West Virginia for the 'Six-  
ties,' West Virginia University, Bureau for Government Research,  
Morgantown: 1960.

Philadelphia and Constitutional Revision, Bureau of Municipal Research and  
Pennsylvania Economy League, Philadelphia: September, 1960.



APPENDIX A--COMPONENTS OF POPULATION CHANGE IN PENNSYLVANIA BY COUNTY: 1950 TO 1960

County	Population		Total change	Births	Deaths	Natural increase	Estimated net migration (2)
	1950	1960 (1)					
Total	10,498,012	11,319,366	821,354	2,417,408	1,142,909	1,274,499	-453,145
Adams	44,197	51,906	7,709	11,226	4,472	6,754	955
Allegheny	1,515,237	1,628,587	113,350	358,516	161,685	196,831	-83,481
Armstrong	80,842	79,524	-1,318	18,542	7,797	10,745	-12,063
Beaver	175,192	206,948	31,756	46,051	16,677	29,374	2,382
Bedford	40,775	42,451	1,676	9,668	4,085	5,583	-3,907
Berks	255,740	275,414	19,674	50,314	28,754	21,560	-1,886
Blair	139,514	137,270	-2,244	29,664	15,950	13,714	-15,958
Bradford	51,722	54,925	3,203	12,561	6,221	6,340	-3,137
Bucks	144,620	308,567	163,947	62,393	16,836	45,557	118,390
Butler	97,320	114,639	17,319	25,659	9,949	15,710	1,609
Cambria	209,541	203,283	-6,258	49,328	20,339	28,989	-35,247
Cameron	7,023	7,586	563	2,013	725	1,288	-725
Carbon	57,558	52,889	-4,669	10,596	6,387	4,209	-8,878
Centre	65,922	78,580	12,658	16,231	5,473	10,758	1,900
Chester	159,141	210,608	51,467	42,092	17,085	25,007	26,460
Clarion	38,344	37,408	-936	8,634	3,763	4,871	-5,807
Clearfield	85,957	81,534	-4,423	18,066	8,808	9,258	-13,681
Clinton	36,532	37,619	1,087	8,260	3,756	4,504	-3,417
Columbia	53,460	53,489	29	11,020	6,056	4,964	-4,935
Crawford	78,948	77,956	-992	17,365	9,045	8,320	-9,312
Cumberland	94,457	124,816	30,359	25,395	9,866	15,529	14,830
Dauphin	197,784	220,255	22,471	46,696	22,288	24,408	-1,937
Delaware	414,234	553,154	138,920	116,913	42,218	74,695	64,225
Elk	34,503	37,328	2,825	9,048	3,451	5,597	-2,772
Erie	219,388	250,682	31,294	60,162	23,408	36,754	-5,460
Fayette	189,899	169,340	-20,559	39,123	19,088	20,035	-40,594
Forest	4,944	4,485	-459	926	576	350	-809
Franklin	75,927	88,172	12,245	18,938	7,793	11,145	1,100
Fulton	10,387	10,597	210	2,400	1,019	1,381	-1,171
Greene	45,394	39,424	-5,970	8,840	4,264	4,576	-10,546
Huntingdon	40,872	39,457	-1,415	8,767	4,357	4,410	-5,825
Indiana	77,106	75,366	-1,740	16,332	7,320	9,012	-10,752
Jefferson	49,147	46,792	-2,355	10,254	5,377	4,877	-7,232
Juniata	15,243	15,874	631	3,585	1,574	2,011	-1,380
Lackawanna	257,396	234,531	-22,865	46,858	31,075	15,783	-38,648
Lancaster	234,717	278,359	43,642	60,896	24,879	36,017	7,625
Lawrence	105,120	112,965	7,845	26,013	10,991	15,022	-7,177
Lebanon	81,683	90,853	9,170	20,466	8,774	11,692	-2,522
Lehigh	198,207	227,536	29,329	43,150	21,254	21,896	7,433
Luzerne	392,241	346,972	-45,269	67,262	43,430	23,832	-69,101
Lycoming	101,249	109,367	8,118	24,674	11,668	13,006	-4,888
McKean	56,607	54,517	-2,090	12,123	5,938	6,185	-8,275
Mercer	111,954	127,519	15,565	29,303	11,835	17,468	-1,903
Mifflin	43,691	44,348	657	9,949	4,371	5,578	-4,921
Monroe	33,773	39,567	5,794	7,363	4,039	3,324	2,470
Montgomery	353,068	516,682	163,614	93,244	39,249	53,995	109,619
Montour	16,001	16,730	729	3,289	1,650	1,639	-910
Northampton	185,243	201,412	16,169	39,839	19,997	19,842	-3,673
Northumberland	117,115	104,138	-12,977	22,090	13,213	8,877	-21,854
Perry	24,782	26,582	1,800	5,938	2,680	3,258	-1,458
Philadelphia	2,071,605	2,002,512	-69,093	450,644	243,569	207,075	-276,168
Pike	8,425	9,158	733	1,404	1,226	178	555
Potter	16,810	16,483	-327	3,842	2,058	1,784	-2,111
Pottsville	200,577	173,027	-27,550	34,332	23,433	10,899	-38,449
Reading	22,912	25,922	3,010	4,830	2,269	2,561	449
Somerset	81,813	77,450	-4,363	17,011	8,088	8,923	-13,286
Sullivan	6,745	6,251	-494	1,422	809	613	-1,107
Susquehanna	31,970	33,137	1,167	7,137	3,726	3,411	-2,244
Tioga	35,474	36,614	1,140	8,551	4,183	4,368	-3,228
Union	23,150	25,646	2,496	4,522	2,244	2,278	218
Venango	65,328	65,295	-33	14,885	7,111	7,774	-7,807
Warren	42,698	45,582	2,884	9,313	4,592	4,721	-1,837
Washington	209,628	217,271	7,643	45,127	20,974	24,153	-16,510
Wayne	28,478	28,237	-241	5,185	3,492	1,693	-1,934
Westmoreland	313,179	352,629	39,450	68,012	30,421	37,591	1,859
Wyoming	16,766	16,813	47	3,341	2,082	1,259	-1,212
York	202,737	238,336	35,599	49,815	21,127	28,688	6,911

(1) Final 1960 Census figures.

(2) Total change minus natural increase.

Source: Bureau of Statistics, Department of Internal Affairs. Population figures are from the U. S. Bureau of the Census. Vital statistics are from the Division of Statistics and Records, Pennsylvania Department of Health.

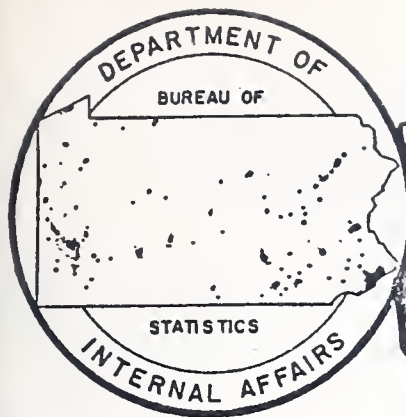
POPULATIONS BY WARD OF PITTSBURGH, ERIE, SCRANTON, AND PHILADELPHIA:  
APRIL 1, 1960

Pittsburgh		Erie		Philadelphia		Philadelphia	
Ward	Population	Ward	Population	Ward	Population	Ward	Population
1	6,199	1	16,959	1	26,112	31	21,073
2	2,206	2	16,240	2	12,805	32	54,497
3	10,143	3	15,922	3	7,918	33	65,622
4	26,477	4	15,573	4	6,971	34	50,896
5	30,266	5	44,614	5	3,378	35	40,928
6	9,856	6	<u>29,132</u>	6	421	36	45,306
7	18,177	Total	138,440	7	17,079	37	18,738
8	17,821	Scranton		8	11,149	38	73,588
9	13,679			9	1,646	39	59,203
10	25,125	Ward	Population	10	4,650	40	57,507
11	23,432	1	4,904	11	1,850	41	64,956
12	23,767	2	7,169	12	3,426	42	53,563
13	26,923	3	2,088	13	7,219	43	42,233
14	47,301	4	6,324	14	10,343	44	36,459
15	29,946	5	6,508	15	35,988	45	30,323
16	23,300	6	2,730	16	5,221	46	80,623
17	13,011	7	1,558	17	6,890	47	31,233
18	18,907	8	490	18	15,285	48	34,439
19	47,187	9	5,596	19	33,668	49	51,234
20	24,837	10	6,305	20	32,385	50	86,026
21	15,458	11	3,355	21	42,761	51	42,822
22	11,074	12	4,388	22	64,982	52	52,246
23	10,038	13	5,829	23	46,800	53	27,377
24	11,382	14	2,259	24	57,987	54	26,609
25	14,298	15	4,942	25	31,917	55	32,482
26	23,401	16	1,265	26	44,486	56	45,852
27	23,489	17	7,661	27	23,621	57	34,460
28	14,453	18	1,022	28	50,616	58	33,968
29	16,604	19	8,559	29	28,250	59	<u>48,898</u>
30	7,353	20	8,226	30	23,527	Total	2,002,512
31	8,095	21	7,904				
32	<u>10,127</u>	22	3,418				
Total	604,332	23	6,884				
		24	<u>2,059</u>				
		Total	111,443				

Source: Figures released by the U. S. Bureau of the Census to the Pennsylvania Department of Internal Affairs, Bureau of Statistics for analytic use.







APR 6 - 1965

SPECIAL RELEASE

DEPARTMENT OF  
INTERNAL AFFAIRS  
Genevieve Blatt, Secretary

BUREAU OF STATISTICS  
Emmett Welch, Director  
Elmer Larson, Asst. Director

MARCH 1965

RELEASE NO. S-8 (REVISED)

# REAPPORTIONMENT

REVISED 1965

## FACTS AND FIGURES ON CONGRESSIONAL AND STATE LEGISLATIVE DISTRICTS

A REPORT TO THE PUBLIC AND THE GENERAL ASSEMBLY

# LIST OF PUBLICATIONS PREPARED BY THE BUREAU OF STATISTICS

NOTE: All charge publications should be purchased directly from the Division of Documents, Post Office Box 1763, Harrisburg, Pennsylvania. Pennsylvania residents please add five percent state sales tax to all orders. A check or money order payable to the Commonwealth of Pennsylvania should accompany each order. Free publications can be obtained directly from the Bureau of Statistics, Department of Internal Affairs, Harrisburg, Pennsylvania.

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(Based on the annual Pennsylvania Industrial Census.)

M-1 1963 Statistics for Manufacturing Industries in Pennsylvania (also 1958, 1960, and 1962)  
 M-2 1963 Statistics By Major Industry Group for Counties and Urban Places (also 1957 and 1962)  
 M-3 Statistics for Urbanized Areas (discontinued after 1962)  
 M-4 1963 General Statistics By Industry and By Size of Establishment (also 1957 to 1960, and 1962)  
 M-5 (MC-63) 1963 County Industry Reports (Separate report for each county; includes data for political sub-divisions covering 1963 manufacturing statistics for individual industries.) - also 1961 and 1962.  
 M-6 (FT-63) Exports By Pennsylvania Manufacturing Companies: 1963 (also 1961 and 1962)  
 M-7 Directory of Pennsylvania Manufacturing Exporters: 1963  
 This directory is an alphabetical listing of all Pennsylvania manufacturing establishments exporting in 1961, their addresses, and a listing of products exported by each -- also lists all exporting establishments under each manufactured product exported.

## 6. PUBLIC UTILITY STATISTICS

(Based on the annual Census of Public Utilities in Pennsylvania)

U-1 Statistics for Electric Utilities in Pennsylvania, 1963 (also 1956 to 1960 and 1962)  
 U-2 Statistics for Gas Utilities in Pennsylvania, 1963 (also 1956 to 1962)  
 U-3 Statistics for Telephone Utilities in Pennsylvania, 1963 (also 1956 to 1962)  
 U-4 Statistics for Water Utilities Including Water Authorities in Pennsylvania, 1963 (also 1956 to 1962)  
 U-5 Statistics for Sewer Authorities in Pennsylvania, 1963 (also 1956 to 1962)  
 U-6 Statistics for Motor Bus and Electric Transportation Companies in Pennsylvania, 1963 (also 1956, 1958 to 1960, and 1962)

## 7. MUNICIPAL AUTHORITY STATISTICS

A-1 1957 Statistics for Municipal Authorities  
 A-1 1958 Statistics for Municipal Authorities  
 A-63 1963 Statistics for Municipal Authorities (also 1959 and 1962)

## 8. INCOME STATISTICS

I-1 Pennsylvania's Personal Income by Type and County for Selected Years, 1929-1960

## 9. SPECIAL RELEASES

S-2 Industrial Statistics for Pennsylvania, 1951 to 1955  
 S-5 Mineral Statistics for Pennsylvania, 1957  
 S-7 Mineral Statistics for Pennsylvania, 1958-1959  
 S-8 Re-apportionment in Pennsylvania (Revised 1965)  
 S-10 Employment by Broad Industry Groups and by County for Selected Years: 1919-1961  
 S-11a Economic Base Studies for Urban Planning and Development in Pennsylvania (A description and evaluation of such studies in Pennsylvania--by Morris Hamburg, University of Pennsylvania)  
 S-11b An Evaluation of Selected Data Requirements and Availability for Urban Economic Planning and Development in Pennsylvania--by Morris Hamburg and John H. Norton, University of Pennsylvania  
 S-11c Selected Methods of Analysis for Urban Economic Planning and Development in Pennsylvania: Commentary on Regional Economic Accounting Systems, Benefit-Cost Analysis and Statistical Decision Theory--by Morris Hamburg and Thomas W. Langford, Jr., Wharton School of Finance and Commerce, University of Pennsylvania  
 S-12(LFC) County Labor Force Report - These reports contain information on employable age population, labor force, unemployment, occupations, and industrial attachment for the cities, boroughs, and townships in fifty-one (51) counties. The data in these reports are not available from any other source. Not included are 16 counties for which similar information is available in the Census Tract publications of the U. S. Bureau of the Census.

S-13 Pennsylvania Scientific and Technical Personnel, 1962  
 S-14 Comparable Statistics for Manufacturing Industries in Pennsylvania: 1916-1962

## C. OUT OF PRINT PUBLICATIONS

These out-of-print publications are listed because copies of many of these reports are available for reference in public, university, and college libraries.

Pennsylvania Productive Industries - These publications include information on manufacturing, public utilities, and mineral industries for the years 1916 to 1950.  
 Index of Statistical Sources for Pennsylvania (Editions in 1955, 1957, 1959, 1960, and 1961)  
 P-1 County and City Population Estimates for Pennsylvania  
 P-2 County Population Estimates for Penna. by Age and Sex  
 P-3 County Population Estimates -- Notes on Methodology.  
 P-4 Local Population Estimates in Pennsylvania  
 S-1 Leading Manufacturing Counties in Pennsylvania  
 S-3 Industrial Statistics for Pennsylvania, 1916 to 1956  
 S-4 Capital Investment for Manufacturing and Mining Industries in Pennsylvania, 1956  
 S-6 Manufacturing Employment in Urban, Suburban, and Rural Places in Pennsylvania, 1960  
 56-5 Shifts in the Geographic Location of Pennsylvania Industry, 1920-1955

### FOREWORD

This is a revision of the report by the same title published in 1961. There has been a very large demand for information on reapportionment, not only from members of the State Legislature, but also from groups of citizens and the general public.

In this report we have assembled statistical tables, maps, and textual explanations bearing on the reapportionment problem, a list of recent court cases on apportionment, and a list of selected references on apportionment.

We sincerely hope that this report will be useful.

A handwritten signature in cursive script, reading "Genevieve Blatt". The signature is written in dark ink and features a prominent, sweeping flourish at the end of the name.

Genevieve Blatt

Secretary of Internal Affairs



Release No. S-8 (Revised)--Reapportionment In Pennsylvania

CONTENTS

	<u>Page</u>
Foreword . . . . .	3
Introduction . . . . .	5
State House of Representatives' Apportionment and Districting . . . .	6
Table 1    Population, Voter Registration for the Two Major Parties, and Votes Cast for State Representatives in the General Election, November 3, 1964, by State Representative Districts . . . . .	7
Figure 1   State House of Representative Districts: January, 1964 . .	10
Table 2    Deviation from Principle of Equal Representation, Penn- sylvania Representative Districts . . . . .	11
State Senate Apportionment and Districting . . . . .	14
Table 3A   Population, Voter Registration, and Votes Cast for Major Candidates for the State Senate in the General Election: November 3, 1964 . . . . .	15
Table 3B   Population, Voter Registration, and Votes for Major Candidates for the State Senate in the General Election: November 6, 1962 . . . . .	15
Figure 2   State Senatorial Districts: January, 1964 . . . . .	16
Table 4    Deviation from Principle of Equal Representation, Penn- sylvania Senatorial Districts . . . . .	17
Congressional Apportionment and Districting . . . . .	18
Table 5    Population, Voter Registration, and Votes Cast for U.S. Congressmen in the 27 Congressional Districts in Penn- sylvania: November 3, 1964 General Election . . . . .	18
Figure 3   Congressional Districts: January, 1962 . . . . .	19
Table 6    Deviation from Principle of Equal Representation, Penn- sylvania Congressional Districts . . . . .	20
Appendix . . . . .	21

### Introduction

1. Section 18 of Article II of the Pennsylvania Constitution of 1874, provides: "The General Assembly --- immediately after each United States decennial census, shall apportion the State into senatorial and representative districts agreeably to the provisions of the two next preceding sections" (Sections 16 and 17 on State Senate and House apportioning procedures respectively).

2. The General Assembly having neglected to reapportion in accordance with the above provision of the State Constitution, Harry K. Butcher and other Pennsylvania tax payers and electors, filed on March 30, 1962, complaints in equity in the Court of Common Pleas of Dauphin County seeking restraint of the defendant (Secretary of the Commonwealth) from taking any steps toward the holding of elections for state legislative offices under the provisions of the existing apportionment acts.<sup>2</sup> The motion was denied June 13, 1962. However, jurisdiction was retained by the Court of Common Pleas, the issues concerning reapportionment were held justiciable and adjudication was refused until the Legislature had an opportunity to enact appropriate legislation at its forth coming sessions.

3. In the spring of 1962 the Supreme Court overturned well-established precedent by authorizing, under the equal protection clause of the Fourteenth Amendment to the Federal Constitution, review by the federal courts of apportionments and districts that determine the composition of state legislatures.<sup>3</sup> The Supreme Court held that where representation in a state legislature is not based on districts reasonably equal in population, the districts must be reapportioned.

4. On November 12, 1963 a special session of the General Assembly was convened for the purpose of considering reapportionment legislation, and two reapportionment bills, the Acts of January 9, 1964, No. 1 which apportions the House, and No. 2, which apportions the Senate were passed and approved by the Governor. These two acts replaced the Act of July 29, 1953, P. L. 956 (pertaining to the apportionment of House districts) and the Act of May 10, 1921, P. L. 449, as amended (pertaining to the apportionment of Senate districts).

5. On November 22, 1963 Drew and others instituted action against Governor Scranton and other State officials in the United States District Court of Pennsylvania<sup>4</sup> challenging the then existing apportionment laws<sup>5</sup> and those introduced in the November 12, 1963 Special Session of the General Assembly<sup>6</sup> as well as sections 16 and 17 of the State Constitution, on the basis that they were in violation of the Fourteenth Amendment to the Federal Constitution, and seeking enjoinder of the Governor and other State officials from holding elections thereunder.

On April 9, 1964 the United States District Court held that the Pennsylvania Reapportionment Acts of January 9, 1964 and Article II sections 16 and 17 of the Pennsylvania Constitution violate the equal protection clause of the Fourteenth Amendment to the Federal Constitution. Accordingly, it enjoined state officials from conducting elections pursuant thereto.

More specifically, the Court held: (a) that the State constitutional requirement that each county have at least one representative, and the limitation of additional representatives was discriminatory; (b) that the Senatorial Reapportionment Act violated the Fourteenth Amendment in denying additional senators to the most populous counties and allotting them instead to less populous counties; and (c) that the Representative Act, providing haphazard arrangement of two, three, and four-member districts alongside single-member districts, violated the basic principle of one man-one vote implicit in the constitutional concept of equal protection.

On April 14, 1964 a stay of the Federal District Court order was granted pending appeal to the Supreme Court of the United States.

6. On June 15, 1964 the United States Supreme Court issued decisions on a series of cases involving the apportionment of districts for state legislatures.<sup>7</sup> The decisions basically provide that state legislative districts shall be based on an equal population system (including both houses of a bicameral legislature). For example, Reynolds v. Sims, 377 U. S. 533 (1964) rules that the Fourteenth Amendment to the Constitution of the United States "demands no less than substantially equal state legislative representation for all citizens of all places". It was therefore ruled that "seats in both houses of a bicameral state legislature must be apportioned on a proportional basis", and that "an individual's right to vote for state legislators is unconstitutionally impaired when its weight is in a substantial fashion diluted when compared with votes of citizens living in other parts of the state".

7. On September 29, 1964, the Supreme Court of Pennsylvania, in Butcher v. Bloom U. 415 Pa. 438 (1964), ruled that the State Reapportionment Acts of January 9, 1964, Nos. 1 and 2 are invalid and concluded, "We have indicated that it is our expectation that the Legislature will proceed in timely fashion to enact reapportionment laws which conform to constitutional requirements. We must recognize, however, that if the General Assembly fails to act in a timely fashion, we shall be obliged to take necessary affirmative action to insure that the 1966 election of Pennsylvania legislators will be conducted pursuant to a constitutionally valid plan. Proper regard for our responsibility compels us to retain jurisdiction of this matter pending legislative action. Should the legislature fail to enact a constitutionally valid plan of reapportionment as soon as practicable, but not later than September 1, 1965, we shall take such action as may be appropriate in light of the existing situation".

8. On November 16, 1964 the United States Supreme Court ruled as follows on the appeal from the April 9, 1964 judgment of the United States District Court for the Middle District of Pennsylvania on the Drew v. Scranton case: "The judgment of the District Court is therefore vacated and the cause is remanded for further consideration in light of the decisions supervening since the entry of the judgment of the District Court". The "decisions supervening" include, Supreme Court decisions on six legislative apportionment cases<sup>8</sup> and the September 29, 1964 decision of the Supreme Court of Pennsylvania declaring the Pennsylvania apportionment Acts of January 9, 1964 invalid and retaining jurisdiction of the case for further appropriate action if the legislature should not enact a valid apportionment plan by a certain date.

9. The members of the 149th Regular Session of the General Assembly particularly the House Committee on Elections and Apportionment and the Senate Committee on Elections and Reapportionment are now working on the problem of reapportioning the State House of Representatives and Senate Districts.

1. Butcher v. Trimarchi, 28Pa. D. & C. 2d 537 (C.P. Dauphin Co. 1962).

2. Act of May 10, 1921, P. L. 449, as amended (pertaining to the apportionment of Senate districts) and Act of July 29, 1953, P. L. 956 (pertaining to the apportionment of House districts).

3. Baker v. Carr, 369 U.S. 186 (1962).

4. Drew v. Scranton, 229 F Supp. 310 (1964).

5. See note 2 above.

6. Subsequently passed and approved by the Governor as Acts of January 9, 1964 Nos. 1 and 2, 25PS (Supp. 1963).

7. See Appendix A for a list of apportionment decisions.

8. See note 7 above.



Table 1 shows for each State representative district the population as of April 1, 1960; the voter registration for the two major parties; and votes cast for house of representative candidates by party and representatives elected in the November 3, 1964 election.

Figure 1 shows the boundaries of each State representative district.

Table 2 shows for each State representative district the population as of April 1, 1960, the deviation of the population per representative from the state-wide average per representative before the 1964 reapportionment, and corresponding data after the 1964 reapportionment. The population of those districts with a plus deviation are under-represented and those with a minus deviation are over-represented.

Before the 1964 reapportionment, District No. 2 in Bucks County had a population of 139,293 per representative or over 2-1/2 times the state-wide average of 53,902 per representative. The deviation from the state-wide average was +85,391 or +158.4 percent. At the other extreme, Forest County had a population of 4,485 per representative or only one-twelfth the state-wide average of 53,902. The deviation from the state-wide average was -49,417 or -91.7 percent. Stated differently, the Representative from District No. 2 of Bucks County represented 31 times as many persons as the Representative from Forest County.

After the 1964 reapportionment, Clearfield County has a population of 81,534 per representative or over 1-1/2 times the state-wide average of 54,160. The deviation from the state-wide average is +27,374 or +50.5 percent. Forest County has a deviation of -49,675 or -91.7 percent. The Representative from Clearfield County would represent 18 times as many persons as the Representative from Forest County.

The average deviation from equal representation was reduced from 10,000 or 18.6 percent before the 1964 reapportionment to 7,300 or 13.5 percent after reapportionment.

In ruling that the Act of January 9, 1964 No. 1 is "constitutionally insufficient", the Pennsylvania Supreme Court recognized the extent of the inequality in representation that would exist under the act in stating:

"We realize as does the Supreme Court of the United States, 'that it is a practical impossibility to arrange legislative districts so that each one has an identical number of residents, or citizens, or voters'. But the present district scheme does not meet that requirement of the Fourteenth Amendment which 'demands no less than substantially equal state legislative representation for all citizens of all places'"

To a considerable extent the magnitude of the deviations from equal representation that exist after this 1964 reapportionment result from the interpretation of Section 17 of Article II of the Pennsylvania Constitution which provides:

"The members of the House of Representatives shall be apportioned among the several counties on a ratio obtained by dividing the population of the State as ascertained by the most recent United States census by two hundred. Every county containing less than five ratios shall have one representative for every full ratio, and an additional representative when the surplus exceeds half a ratio; but each county shall have at least one representative. Every county containing five ratios or more shall have one representative for every full ratio. Every city containing a population equal to a ratio shall elect separately its proportion of the representatives allotted to the county in which it is located. Every city entitled to more than four representatives, and every county having over one hundred thousand inhabitants, shall be divided into districts of compact and contiguous territory, each district to elect its proportion of representatives according to its population, but no district shall elect more than four representatives".

This section was held to be in violation of the Fourteenth Amendment to the Federal Constitution by the United States District Court of Pennsylvania.<sup>9</sup>

The Supreme Court of Pennsylvania ruled, on the other hand, in *Butcher v. Bloom* that it is not this section, but the State Legislature's interpretation of it that is at fault. The Court stated that:

"In examining the districts established by the Act, it is apparent that many population disparities resulted from an allocation by the Legislature of at least one representative to each county in the state regardless of the population of that county. This allocation resulted from the assumption that the heretofore unquestioned pattern of one representative per county was mandated by the Pennsylvania Constitution, Article II, Section 17.--- (This section) when considered as a whole, demands that the boundaries of all political subdivisions be respected when not in conflict with the overriding population principle. It must be interpreted to require that counties with small populations, if necessary, be joined with other counties for the purpose of electing and sharing a representative. We hold that no provision of paragraph 17 prohibits the division or combination of counties in the formation of districts where the population principle cannot otherwise be satisfied".

#### Single v. multi-member districts

The United States Supreme Court and the State Supreme Court did not specifically deal with the problem of single v. multi-member districts. However, the United States District Court for the Middle District of Pennsylvania ruled<sup>9</sup> that the Act of January 9, 1964, No. 1 and Section 17 of Article II of the Pennsylvania Constitution violate the basic principle of one man-one vote implicit in the constitutional concept of equal protection because they establish multi-member districts alongside single-member districts. The court indicated that each voter should vote for the same number of representatives--otherwise those in a multi-member district would have 2, 3, or more legislators looking out for their interests while those in a single-member district would have only one representative. The court indicated also that "minority groups" may well be submerged in multi-member districts and that they can often make their votes much more effective in smaller single-member districts.

In commenting on this problem, George Dixon said, "If in the next year or two the Supreme Court should act on a case of this sort, I would expect the plea for a constitutional right to sub-districting to receive respectful consideration. Indeed, if the first case were one brought by a racial minority, I would be inclined to expect the Court to require sub-districting as a further offshoot of equal protection".<sup>10</sup>

9. *Drew v. Scranton*, 229 F Supp. 310 (1964).

10. Dixon, R. G., "Reapportionment in the Supreme Court and Congress: Constitutional Struggle for Fair Representation", *Michigan Law Review*, Vol. 63, No. 2, December, 1964.



TABLE 1: POPULATION, VOTER REGISTRATION FOR THE TWO MAJOR PARTIES, AND VOTES CAST FOR STATE REPRESENTATIVES IN THE GENERAL ELECTION, NOVEMBER 3, 1964, BY STATE REPRESENTATIVE DISTRICTS

County	Dis- trict no.	Population April 1, 1960	Registered voters November 3, 1964			Votes cast for State Representatives (1)			Elected Representative and party
			Total	Democratic	Republican	Total	Democratic	Republican	
Total		11,319,366	5,643,961	2,884,396	2,759,565	8,158,758	4,449,772	3,708,986	
Adams	1	51,906	23,677	10,862	12,815	19,864	9,498	10,366	Worley (R)
Allegheny	1	137,544	66,301	52,192	14,109	102,314	73,570	28,744	Foerster (D)-Fenrich (D)
	2	50,690	24,807	20,319	4,488	19,323	16,057	3,266	Johnson (D)
	3	49,644	23,643	19,586	4,057	19,444	15,400	4,044	Lutty (D)
	4	49,413	25,391	14,401	10,990	21,408	10,354	11,054	Rigby (R)
	5	47,301	26,700	17,077	9,623	23,465	10,927	12,538	Markovitz (R)
	6	132,115	67,207	48,646	18,561	107,208	71,502	35,706	Lamb (D)-Leonard (D)
	7	143,605	70,570	57,180	13,390	113,181	88,007	25,174	Clarke (D)-Irvis (D)
	8	53,515	27,290	16,723	10,567	23,290	12,950	10,340	Sullivan (D)
	9	111,365	60,218	29,019	31,199	103,827	45,735	58,092	Bair (R)-Zord (R)
	10	63,944	34,020	25,454	8,566	22,173	14,948	7,225	Homer (D)
	11	127,373	66,969	52,545	14,424	109,492	83,136	26,356	Filo (D)-Zemprelli (D)
	12	62,839	30,231	22,465	7,766	25,246	18,383	6,863	Walsh (D)
	13	60,727	31,984	21,032	10,952	27,889	15,875	12,014	Bonetto (D)
	14	235,672	126,026	62,020	64,006	432,503	192,555	239,948	Donaldson (R)-Wilt (R)- Gibb (R)-Appleton (R)
		15 (2)	151,874	76,938	36,585	40,353	199,155	86,500	112,655
	16	150,966	79,640	39,539	40,101	203,094	99,534	103,560	Otto (R)-Walker (R)- Dardanell (D)
Armstrong	1	79,524	38,302	16,843	21,459	31,802	16,805	14,997	Clark (D)
Beaver	1	102,521	46,696	29,796	16,900	77,793	53,610	24,183	Hamilton (D)-Klein (D)
	2	104,427	49,837	27,222	22,615	84,959	51,206	33,753	Stone (D)-Lench (D)
Bedford	1	42,451	22,379	10,351	12,028	17,317	7,605	9,712	Foor (R)
Berks	1	48,551	24,118	16,379	7,739	20,695	13,817	6,878	Hoh (D)
	2	59,639	31,035	15,967	15,068	26,784	13,167	13,617	Gallen (R)
	3	56,817	25,350	14,774	10,576	21,641	10,659	10,982	Piper (R)
	4	60,781	26,412	17,965	8,447	22,273	14,257	8,016	Fryer (D)
	5	49,626	21,490	16,617	4,873	17,432	13,310	4,122	LaMarca (D)
Blair	1	69,407	31,001	13,132	17,869	26,051	12,434	13,617	Clarke (R)
	2	67,863	30,315	9,993	20,322	24,355	8,321	16,034	Wilt (R)
Bradford	1	54,925	25,086	8,193	16,893	14,677	-	14,677	Williams (R)
Bucks	1	236,905	116,759	47,928	68,831	407,778	198,029	209,749	Williams (R)-Wright (R)- Renninger (R)-Kooker (R)
	2	71,662	28,831	18,067	10,764	24,845	17,160	7,685	Gallagher (D)
Butler	1	58,819	26,459	10,964	15,495	22,263	11,814	10,449	Tiberi (D)
	2	55,820	25,866	11,029	14,837	21,718	10,299	11,419	Kennedy (R)
Cambria	1	56,756	25,597	14,187	11,410	21,865	12,917	8,948	McAneny (D)
	2	95,114	47,085	25,504	21,581	78,614	45,895	32,719	McNally (D)-Englehart (D)
	3	51,413	23,411	16,501	6,910	19,224	14,314	4,910	Yahner (D)
Cameron	1	7,586	3,853	1,356	2,497	3,318	1,843	1,475	Murray (D)
Carbon	1	52,889	26,752	14,042	12,710	22,504	13,693	8,811	Bonner (D)
Centre	1	78,580	31,316	12,775	18,541	26,084	10,451	15,633	Fulmer (R)
Chester	1	105,824	43,434	14,288	29,146	77,014	36,408	40,606	Slack (R)-Reynolds (R)
	2	104,784	57,148	13,974	43,174	97,181	37,485	59,696	Ashton (R)-Stauffer (R)
Clarion	1	37,408	18,501	8,775	9,726	15,521	7,339	8,182	Alexander (R)
Clearfield	1	81,534	36,852	19,116	17,736	30,297	15,568	14,729	O'Neil (D)
Clinton	1	37,619	16,899	7,490	9,409	14,466	7,126	7,340	Bossert (R)
Columbia	1	53,489	27,521	15,273	12,248	23,036	12,101	10,935	Shelhamer (D)
Crawford	1	77,956	34,181	13,424	20,757	28,712	12,230	16,482	Dwyer (R)
Cumber- land (3)	1	62,193	60,288	23,348	36,940	26,169	10,737	15,432	Kistler (R)
	2	62,623				23,886	10,785	13,101	George (R)
Dauphin	1	79,697	38,735	10,493	28,242	30,408	13,476	16,932	Ogilvie (R)
	2	140,558	68,211	19,973	48,238	170,508	67,953	102,555	Hocker (R)-Hepford (R)- Caldwell, Jr. (R)
Delaware	1	63,658	27,837	6,113	21,724	22,568	12,511	10,057	Gremminger (D)
	2	255,556	144,971	33,347	111,624	498,284	226,856	271,428	Dengler (R)-Ryan (R)- Kernaghan (R)-Odorisio (R)
	3	233,940	122,264	27,787	94,477	420,145	197,251	222,894	Mifflin (R)-Isaacs (R)- Harris (R)-Kester (R)
Elk	1	37,328	17,168	10,001	7,167	15,004	9,294	5,710	Renwick (D)
Erie	1	69,946	35,830	19,538	16,292	29,964	16,676	13,288	Bellomint (D)
	2	68,494	32,704	22,740	9,964	27,147	19,129	8,018	Polaski (D)
	3	112,242	54,604	21,706	32,898	90,420	42,550	47,870	Blair (R)-O'Dell (R)

(continued on following page)

TABLE 1: (continued)

County	Dis- trict no.	Population April 1, 1960	Registered voters November 3, 1964			Votes cast for State Representatives (1)			Elected Representative and party
			Total	Democratic	Republican	Total	Democratic	Republican	
Fayette	1	56,971	25,350	18,062	7,288	18,793	11,628	7,165	Packroni (D)
	2	112,369	53,097	36,785	16,312	79,553	53,277	26,276	Malinzak (D)-Kornick (D)
Forest	1	4,485	2,596	1,031	1,565	2,113	806	1,307	Davis (R)
Franklin	1	44,617	19,850	9,603	10,247	17,720	8,005	9,715	Horst (R)
	2	43,555	20,768	8,864	11,904	15,489	9,514	5,975	Shuman (D)
Fulton	1	10,597	5,061	2,695	2,366	4,017	1,878	2,139	Elvey (R)
Greene	1	39,424	19,174	14,585	4,589	15,129	11,615	3,514	Headlee (D)
Huntingdon	1	39,457	17,773	6,192	11,581	14,107	5,676	8,431	Snare (R)
Indiana	1	75,366	35,795	15,583	20,212	29,279	12,033	17,246	Buchanan (R)
Jefferson	1	46,792	23,963	9,910	14,053	19,256	8,595	10,661	Smith (R)
Juniata	1	15,874	8,622	3,956	4,666	7,334	3,647	3,687	Zimmerman (R)
Lackawanna	1	55,074	32,136	20,483	11,653	25,808	16,921	8,887	Moran (D)
	2	56,369	33,052	18,799	14,253	27,292	17,440	9,852	Needham (D)
	3	67,164	41,928	32,841	9,087	34,457	27,035	7,422	Wargo (D)
	4	55,924	41,715	20,907	20,808	28,984	15,000	13,984	Wansacz (D)
Lancaster	1	61,055	28,063	10,887	17,176	24,217	14,214	10,003	Pittenger (D)
	2	217,304	93,213	25,291	67,922	320,954	120,292	200,662	Eshleman (R)-Hill (R)- Royer (R)-Horner (R)
Lawrence	1	53,353	24,563	12,089	12,474	20,819	13,175	7,644	Cioffi (D)
	2	59,612	27,678	12,009	15,669	23,712	11,260	12,452	Fox (R)
Lebanon	1	90,853	39,460	12,739	26,721	66,506	26,293	40,213	Seltzer (R)-Manbeck (R)
Lehigh	1	108,347	50,045	25,686	24,359	85,701	48,816	36,885	Frank (D)-Ritter (D)
	2	119,189	57,024	29,521	27,503	97,180	49,696	47,484	Markley (R)- Eckensberger, Jr. (D)
Luzerne	1	55,300	29,587	12,327	17,260	23,612	12,996	10,616	Bachman (D)
	2	56,124	31,813	12,808	19,005	24,795	14,205	10,590	Meholchick (D)
	3	55,926	31,823	17,952	13,871	24,619	17,853	6,766	Musto (D)
	4	58,929	32,957	12,957	20,000	26,132	15,343	10,789	Curwood (D)
	5	57,142	31,649	11,553	20,096	25,411	15,790	9,621	Shupnick (D)
	6	63,551	33,135	14,351	18,784	26,405	16,861	9,544	O'Brien (D)
Lycoming	1	51,014	24,062	9,814	14,248	20,135	11,276	8,859	Wise (D)
	2	58,353	29,133	12,685	16,448	24,962	10,152	14,810	Bush (R)
McKean	1	54,517	23,230	7,389	15,841	18,667	8,571	10,096	Westerberg (R)
Mercer	1	61,209	28,224	13,766	14,458	24,201	12,411	11,790	Bennett (D)
	2	66,310	30,353	15,385	14,968	25,690	12,216	13,474	Willard (R)
Mifflin	1	44,348	17,714	8,317	9,397	14,782	8,729	6,053	Hetrick (D)
Monroe	1	39,567	19,947	11,720	8,227	16,804	10,375	6,429	Yetter, Jr. (D)
Montgomery	1	99,444	56,382	13,865	42,517	96,329	41,026	55,303	Coughlin (R)-Brugger (R)
	2	128,234	67,162	16,666	50,496	116,154	52,339	63,815	Butera (R)-Jenkins (R)
	3	134,560	78,251	18,780	59,471	136,553	60,978	75,575	Mebus (R)-Nicholson (R)
	4	154,444	70,246	23,423	46,823	180,062	82,018	98,044	Holl (R)-Pancoast (R)- Maack (R)
Montour	1	16,730	7,304	3,344	3,960	6,397	2,621	3,776	Kessler (R)
Northampton	1	55,325	24,849	17,468	7,381	21,001	13,244	7,757	O'Donnell (D)
	2	52,438	24,582	16,478	8,104	20,709	12,675	8,034	Kowalyszyn (D)
	3	93,649	44,296	26,709	17,587	72,942	49,661	23,281	Reibman (D)-Prendergast (D)
Northumber- land	1	50,422	28,627	12,817	15,810		(4)	(4)	(4)
	2	53,716	25,296	9,735	15,561	21,111	9,485	11,630	Bower (R)
Perry	1	26,582	13,866	5,247	8,619	11,274	4,774	6,500	Holman, Jr. (R)
Philadel- phia	1	57,507	27,916	16,352	11,564	23,597	14,739	8,858	O'Donnell (D)
	2	123,445	64,825	47,105	17,720	108,480	86,666	21,814	Lawson (D)-Mullen (D)
	3	50,896	28,044	17,789	10,255	24,175	17,523	6,652	Kelly (D)
	4	52,246	30,352	23,042	7,310	25,872	23,026	2,846	Flanery (D)
	5	118,067	52,004	38,943	13,061	81,591	69,412	12,179	Hankins (D)-Anderson (D)
	6	59,203	27,693	15,236	12,457	23,534	15,109	8,425	Skale (D)
	7	105,037	53,857	29,758	24,099	91,112	56,107	35,005	Scarcelli (D)-Parlante (D)
	8	66,017	38,244	21,303	16,941	32,138	19,681	12,457	Cianfrani (D)
	9	68,833	35,135	27,180	7,955	27,831	24,000	3,831	Jones (D)
	10	53,550	20,632	13,961	6,671	16,158	11,999	4,159	Rubin (D)
	11	59,483	27,344	22,084	5,260	20,764	19,169	1,595	Arlene (D)
	12	166,944	75,476	53,437	22,039	182,904	140,095	42,809	Welsh (D)-Frascella (D)- Shelton (D)
	13	54,497	20,726	16,130	4,596	15,761	14,625	1,136	Monroe (D)
	14	50,616	22,733	17,913	4,820	18,141	17,007	1,134	Emerson (D)
	15	53,563	30,008	17,439	12,569	26,593	16,274	10,319	Sherman (D)

(continued on following page)

TABLE 1: (continued)

County	Dis- trict no.	Population April 1, 1960	Registered voters November 3, 1964			Votes cast for State Representatives (1)			Elected Representative and party
			Total	Democratic	Republican	Total	Democratic	Republican	
	16	51,055	21,458	13,570	7,888	16,910	12,277	4,633	Limper (D)
	17	98,598	48,585	27,170	21,415	81,869	52,883	28,986	Lederer (D)-Sullivan (D)
	18	65,622	34,173	21,803	12,370	29,259	18,970	10,289	Comer (D)
	19	64,956	32,761	19,635	13,126	28,451	17,265	11,186	Branca (D)
	20	53,986	31,946	20,509	11,437	28,318	21,389	6,929	Eilberg (D)
	21	114,280	85,740	47,340	38,400	154,812	92,546	62,266	Greenberg (D)-Pashley (D)
	22	42,761	24,663	9,259	15,404	21,889	10,181	11,708	Hamilton, Jr. (R)
	23	64,982	33,428	20,556	12,872	28,358	19,930	8,428	Hartley (D)
	24	48,898	26,728	13,062	13,666	23,919	12,761	11,158	Morley (D)
	25	137,260	78,621	52,180	26,441	139,001	100,480	38,521	Gelfand (D)-Perry (D)
	26	120,210	64,702	32,477	32,225	113,794	65,611	48,183	Armstrong (D)-Pezak (D)
Pike	1	9,158	6,541	2,279	4,262	5,244	1,411	3,833	Eshback (R)
Potter	1	16,483	8,313	3,017	5,296	6,933	2,733	4,200	Goodrich (R)
Schuylkill (4)	1	64,196	35,648	12,896	22,752	-	-	-	
	2	108,831	63,837	23,210	40,627	-	-	-	
Snyder	1	25,922	11,494	3,189	8,305	9,475	3,062	6,413	Murray, Jr. (R)
Somerset	1	77,450	39,178	18,051	21,127	32,807	17,271	15,536	Dumbauld (D)
Sullivan	1	6,251	3,423	1,483	1,940	3,061	1,251	1,810	Lee (R)
Susquehanna	1	33,137	17,596	6,141	11,455	14,292	5,673	8,619	Cavender (R)
Tioga	1	36,614	17,617	4,929	12,688	14,182	5,676	8,506	Spencer (R)
Union	1	25,646	11,219	3,012	8,207	9,245	3,071	6,174	Purnell (R)
Venango	1	65,295	27,050	9,191	17,859	22,495	10,826	11,669	Kahle (R)
Warren	1	45,582	20,138	7,008	13,130	16,411	8,247	8,164	Donnelly (D)
Washington	1	108,030	50,619	32,383	18,236	71,071	49,064	32,007	Lowry (R)-Brunner (D)
	2	109,241	53,937	39,046	14,891	87,220	60,718	26,502	Murphy (D)-Cantoni (D)
Wayne	1	28,237	15,090	4,488	10,602	12,191	4,268	7,923	Wall (R)
Westmore- land (3)	1	64,337	174,499	117,551	56,948	27,554	18,965	8,589	Schmitt (D)
	2	58,224				24,556	15,519	9,037	Stemmler (D)
	3	60,717				26,956	16,566	10,390	Laudadio (D)
	4	57,659				26,161	14,341	11,820	Mills (D)
	5	49,827				22,982	15,631	7,351	Suchko (D)
	6	61,865				25,701	16,339	9,362	Kradel (D)
Wyoming	1	16,813	9,715	3,115	6,600	8,203	3,650	4,553	Wynd (R)
York	1	54,504	24,503	15,979	8,524	20,343	12,529	7,814	Gailey, Jr. (D)
	2	64,774	29,553	15,213	14,340	25,219	13,485	11,734	Alexander (D)
	3	57,176	27,339	13,884	13,455	23,497	11,445	12,052	Anderson (R)
	4	61,882	26,734	16,408	10,326	22,959	13,879	9,080	Rudisill (D)

- (1) Entries in this column represent the number of votes cast, not the number of voters. In districts where there is more than one candidate from each party, the number of votes cast will always exceed the number of registered voters.
- (2) Population shown is as certified by the U. S. Bureau of the Census to Congress and the President. Subsequent to certification, the U. S. Bureau of the Census discovered that the population of Allegheny County and of the State had been understated by 1,234.
- (3) Registration by districts not available.
- (4) Certified vote not available because of an election contest.

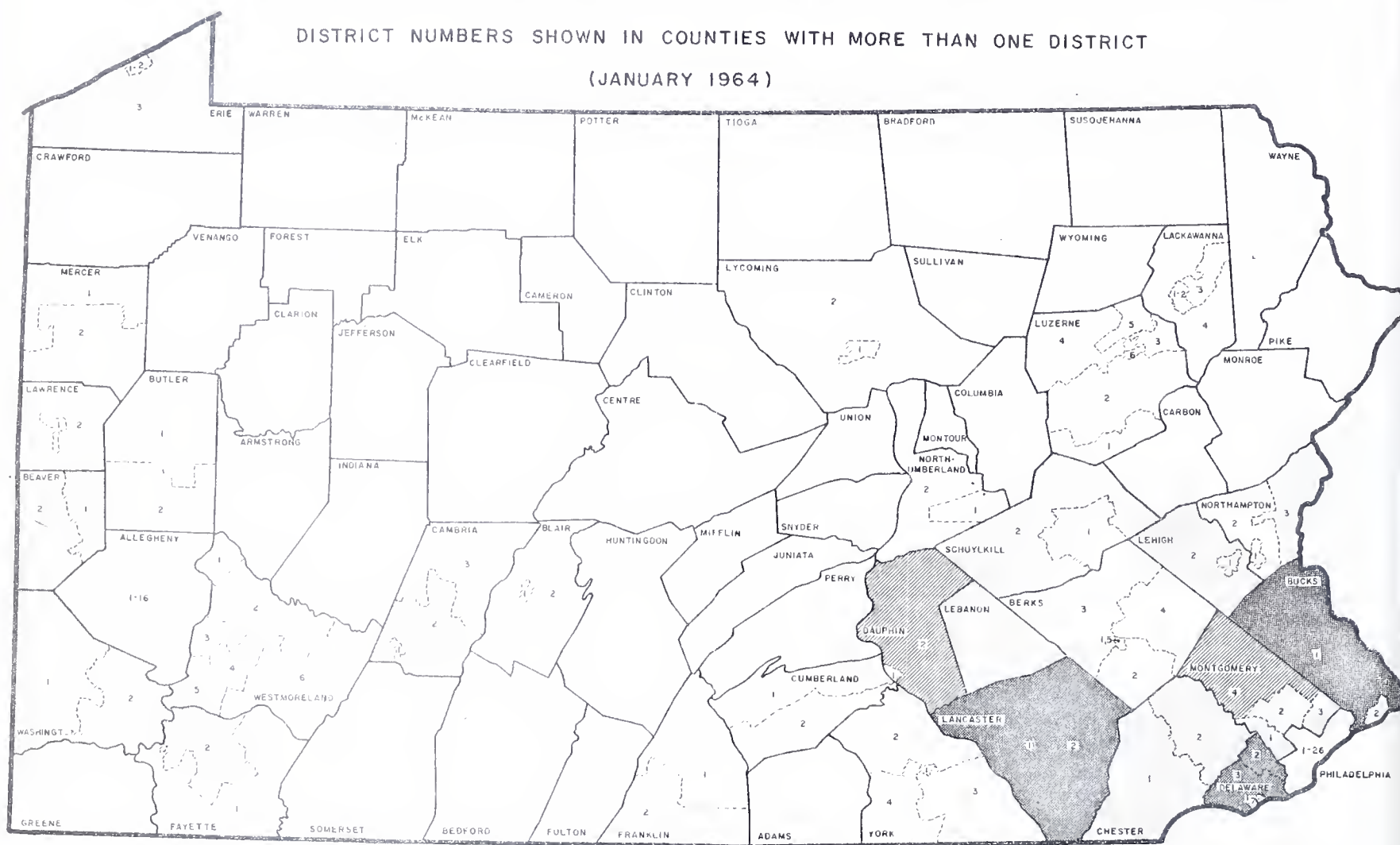
Source: Compiled by the Bureau of Statistics, Department of Internal Affairs, from the 1960 Census of Population and from tabulated worksheets in the Pennsylvania Department of State, Bureau of Commissions and Elections.



# STATE HOUSE OF REPRESENTATIVES DISTRICTS

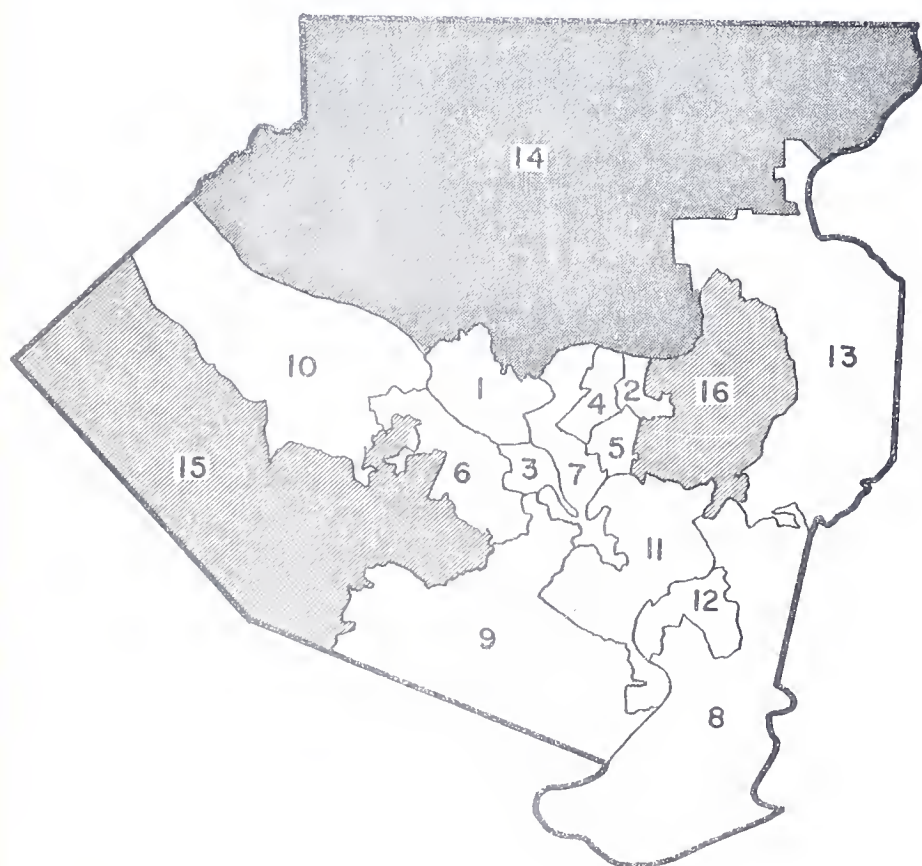
DISTRICT NUMBERS SHOWN IN COUNTIES WITH MORE THAN ONE DISTRICT

(JANUARY 1964)



□ 1 Representative    □ 2 Representatives    ▨ 3 Representatives    ▩ 4 Representatives

## ALLEGHENY COUNTY



## PHILADELPHIA COUNTY

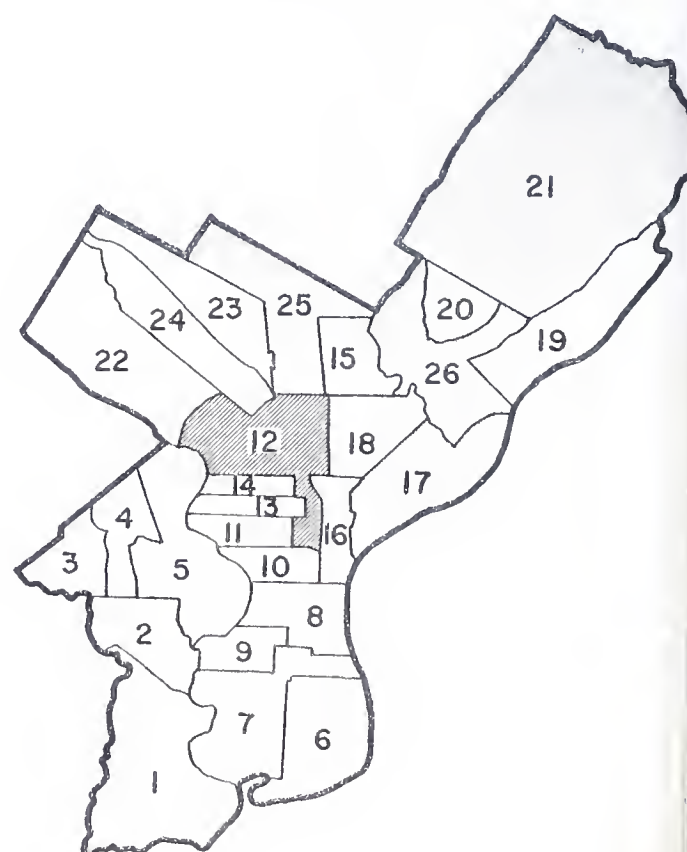


TABLE 2: DEVIATION FROM PRINCIPLE OF EQUAL REPRESENTATION,  
PENNSYLVANIA REPRESENTATIVE DISTRICTS

County	Before 1964 reapportionment (1)					After 1964 reapportionment (1)				
	District number	Number of representatives	Population	Deviation from average per representative		District number	Number of representatives	Population	Deviation from average per representative	
				Number	Percent				Number	Percent
	Total	210	11,319,366				209	11,319,366		
Adams	1	1	51,906	-1,996	-3.7	1	1	51,906	-2,254	-4.2
Allegheny	1	2	96,385	-5,709	-10.6	1	2	137,544	+14,612	+27.0
	2	1	29,883	-24,019	-44.6	2	1	50,690	-3,470	-6.4
	3	1	38,804	-15,098	-28.0	3	1	49,644	-4,516	-8.3
	4	1	41,609	-12,293	-22.8	4	1	49,413	-4,747	-8.8
	5	1	50,690	-3,212	-6.0	5	1	47,301	-6,859	-12.7
	6	1	47,301	-6,601	-12.2	6	2	132,115	+11,897	+22.0
	7	1	38,041	-15,861	-29.4	7	2	143,605	+17,642	+32.6
	8	1	45,251	-8,651	-16.0	8	1	53,515	+645	+1.2
	9	1	73,918	+20,016	+37.1	9	2	111,365	+1,522	+2.8
	10	1	54,748	+846	+1.6	10	1	63,944	+9,784	+18.1
	11	1	46,792	-7,110	-13.2	11	2	127,373	+9,526	+17.6
	12	1	46,890	-7,012	-13.0	12	1	62,839	+8,679	+16.0
	13	1	45,489	-8,413	-15.6	13	1	60,727	+6,567	+12.1
	14	2	120,412	+6,304	+11.7	14	4	235,672	+4,758	+8.8
	15(2)	4	302,025	+21,604	+40.1	15(2)	3	151,874	-3,535	-6.5
	16	4	297,862	+20,563	+38.1	16	3	150,966	-3,838	-7.1
	17	4	252,487	+9,220	+17.1	-	-	-	-	-
Armstrong	1	2	79,524	-14,140	-26.2	1	1	79,524	+25,364	+46.8
Beaver	1	1	76,152	+22,250	+41.3	1	2	102,521	-2,900	-5.3
	2	2	130,796	+11,496	+21.3	2	2	104,427	-1,947	-3.6
Bedford	1	1	42,451	-11,451	-21.2	1	1	42,451	-11,709	-21.6
Berks	1	2	98,177	-4,813	-8.9	1	1	48,551	-5,609	-10.4
	2	1	59,639	+5,737	+10.6	2	1	59,639	+5,479	+10.1
	3	1	56,817	+2,915	+5.4	3	1	56,817	+2,657	+4.9
	4	1	60,781	+6,879	+12.8	4	1	60,781	+6,621	+12.2
	-	-	-	-	-	5	1	49,626	-4,534	-8.4
Blair	1	2	69,407	-19,198	-35.6	1	1	69,407	+15,247	+28.1
	2	1	67,863	+13,961	+25.9	2	1	67,863	+13,703	+25.3
Bradford	1	1	54,925	+1,023	+1.9	1	1	54,925	+765	+1.4
Bucks	1	2	169,274	+30,735	+57.0	1	4	236,905	+5,066	+9.3
	2	1	139,293	+85,391	+158.4	2	1	71,662	+17,502	+32.3
Butler	1	2	114,639	+3,417	+6.3	1	1	58,819	+4,659	+8.6
	-	-	-	-	-	2	1	55,820	+1,660	+3.1
Cambria	1	1	56,756	+2,854	+5.3	1	1	56,756	+2,596	+4.8
	2	3	146,527	-5,060	-9.4	2	2	95,114	-6,603	-12.2
	-	-	-	-	-	3	1	51,413	-2,747	-5.1
Cameron	1	1	7,586	-46,316	-85.9	1	1	7,586	-46,574	-86.0
Carbon	1	1	52,889	-1,013	-1.9	1	1	52,889	-1,271	-2.3
Centre	1	1	78,580	+24,678	+45.8	1	1	78,580	+24,420	+45.1
Chester	1	1	49,034	-4,868	-9.0	1	2	105,824	-1,248	-2.3
	2	2	161,574	+26,885	+49.9	2	2	104,784	-1,768	-3.3
Clarion	1	1	37,408	-16,494	-30.6	1	1	37,408	-16,752	-30.9
Clearfield	1	1	44,853	-9,049	-16.8	1	1	81,534	+27,374	+50.5
	2	1	36,681	-17,221	-31.9	-	-	-	-	-
Clinton	1	1	37,619	-16,283	-30.2	1	1	37,619	-16,541	-30.5
Columbia	1	1	53,489	-413	-.8	1	1	53,489	-671	-1.2
Crawford	1	2	77,956	-14,924	-27.7	1	1	77,956	+23,796	+43.9
Cumberland	1	2	124,816	+8,506	+15.8	1	1	62,193	+8,033	+14.8
	-	-	-	-	-	2	1	62,623	+8,463	+15.6
Dauphin	1	2	79,697	-14,053	-26.1	1	1	79,697	+25,537	+47.1
	2	2	140,558	+16,377	+30.4	2	3	140,558	-7,307	-13.5
Delaware	1	1	63,658	+9,756	+18.1	1	1	63,658	+9,498	+17.5
	2	2	129,391	+10,794	+20.0	2	4	255,556	+9,729	+18.0
	3	4	360,105	+36,124	+7.0	3	4	233,940	+4,325	+8.0
Elk	1	1	37,328	-16,574	-30.7	1	1	37,328	-16,832	-31.1
Erie	1	1	60,627	+6,725	+12.5	1	1	69,946	+15,786	+29.1
	2	1	77,813	+23,911	+44.4	2	1	68,494	+14,334	+26.5
	3	2	112,242	+2,219	+4.1	3	2	112,242	+1,961	+3.6
Fayette	1	1	39,447	-14,455	-26.8	1	1	56,971	+2,811	+5.2
	2	3	129,893	-10,604	-19.7	2	2	112,369	+2,024	+3.7

(continued on following page)

TABLE 2: (continued)

County	Before 1964 reapportionment (1)					After 1964 reapportionment (1)				
	District number	Number of representatives	Population	Deviation from average per representative		District number	Number of representatives	Population	Deviation from average per representative	
				Number	Percent				Number	Percent
Forest	1	1	4,485	-49,417	-91.7	1	1	4,485	-49,675	-91.7
Franklin	1	1	88,172	+34,270	+63.6	1	1	44,617	-9,543	-17.6
	-	-	-	-	-	2	1	43,555	-10,605	-19.6
Fulton	1	1	10,597	-43,305	-80.3	1	1	10,597	-43,563	-80.4
Greene	1	1	39,424	-14,478	-26.8	1	1	39,424	-14,736	-27.2
Huntingdon	1	1	39,457	-14,445	-26.8	1	1	39,457	-14,703	-27.1
Indiana	1	1	75,366	+21,464	+39.8	1	1	75,366	+21,206	+39.1
Jefferson	1	1	46,792	-7,110	-13.2	1	1	46,792	-7,368	-13.6
Juniata	1	1	15,874	-38,028	-70.5	1	1	15,874	-38,286	-70.7
Lackawanna	1	1	55,074	+1,172	+2.2	1	1	55,074	+1,144	+1.7
	2	1	56,369	+2,467	+4.6	2	1	56,369	+2,209	+4.1
	3	1	37,251	-16,651	-30.9	3	1	67,164	+13,004	+24.0
	4	1	39,537	-14,365	-26.6	4	1	55,924	+1,764	+3.3
	5	1	46,300	-7,602	-14.1	-	-	-	-	-
Lancaster	1	1	61,055	+7,153	+13.3	1	1	61,055	+6,895	+12.7
	2	3	217,304	+18,533	+34.4	2	4	217,304	+166	+1.3
Lawrence	1	1	44,790	-9,112	-16.9	1	1	53,353	-807	-1.5
	2	1	68,175	+14,273	+26.5	2	1	59,612	+5,452	+10.1
Lebanon	1	2	90,853	-8,475	-15.7	1	2	90,853	-8,734	-16.1
Lehigh	1	2	108,347	+272	+1.5	1	2	108,347	+13	+1.02
	2	2	119,189	+5,693	+10.6	2	2	119,189	+5,434	+10.0
Luzerne	1	1	53,746	-156	-1.3	1	1	55,300	+1,140	+2.1
	2	1	44,856	-9,046	-16.8	2	1	56,124	+1,964	+3.6
	3	1	45,048	-8,854	-16.4	3	1	55,926	+1,766	+3.3
	4	1	40,982	-12,920	-24.0	4	1	58,929	+4,769	+8.8
	5	1	43,546	-10,356	-19.2	5	1	57,142	+2,982	+5.5
	6	1	55,243	+1,341	+2.5	6	1	63,551	+9,391	+17.3
	7	1	63,551	+9,649	+17.9	-	-	-	-	-
Lycoming	1	1	51,014	-2,888	-5.4	1	1	51,014	-3,146	-5.8
	2	1	58,353	+4,451	+8.3	2	1	58,353	+4,193	+7.7
McKean	1	1	54,517	+615	+1.1	1	1	54,517	+357	+1.7
Mercer	1	1	63,848	+9,946	+18.4	1	1	61,209	+7,049	+13.0
	2	1	63,671	+9,769	+18.1	2	1	66,310	+12,150	+22.4
Mifflin	1	1	44,348	-9,554	-17.7	1	1	44,348	-9,812	-18.1
Monroe	1	1	39,567	-14,335	-26.6	1	1	39,567	-14,593	-26.9
Montgomery	1	1	64,529	+10,627	+19.7	1	2	99,444	-4,438	-8.2
	2	1	76,729	+22,827	+42.3	2	2	128,234	+9,957	+18.4
	3	4	375,424	+39,954	+74.1	3	2	134,560	+13,120	+24.2
	-	-	-	-	-	4	3	154,444	-2,679	-4.9
Montour	1	1	16,730	-37,172	-69.0	1	1	16,730	-37,430	-69.1
Northampton	1	1	55,325	+1,423	+2.6	1	1	55,325	+1,165	+2.1
	2	3	146,087	-5,206	-9.7	2	1	52,438	-1,722	-3.2
	-	-	-	-	-	3	2	93,649	-7,336	-13.5
Northumberland	1	1	50,422	-3,480	-6.5	1	1	50,422	-3,738	-6.9
	2	1	53,716	-186	-1.3	2	1	53,716	-444	-1.8
Perry	1	1	26,582	-27,320	-50.7	1	1	26,582	-27,578	-50.9
Philadelphia	1	1	59,203	+5,301	+9.8	1	1	57,507	+3,347	+6.2
	2	1	38,917	-14,985	-27.8	2	2	123,445	+7,562	+14.0
	3	2	78,925	-14,439	-26.8	3	1	50,896	-3,264	-6.0
	4	1	45,306	-8,596	-15.9	4	1	52,246	-1,914	-3.5
	5	2	70,022	-18,891	-35.0	5	2	118,067	+4,873	+9.0
	6	1	28,480	-25,422	-47.2	6	1	59,203	+5,043	+9.3
	7	1	42,284	-11,618	-21.5	7	2	105,037	-1,642	-3.0
	8	1	39,275	-14,627	-27.1	8	1	66,017	+11,857	+21.9
	9	1	48,953	-4,949	-9.2	9	1	68,833	+14,673	+27.1
	10	1	59,483	+5,581	+10.3	10	1	53,550	-610	-1.1
	11	1	54,497	+595	+1.1	11	1	59,483	+5,323	+9.8
	12	1	50,616	-3,286	-6.1	12	3	166,944	+1,488	+2.7
	13	2	92,326	-7,739	-14.4	13	1	54,497	+337	+1.6
	14	1	42,761	-11,141	-20.7	14	1	50,616	-3,544	-6.5
	15	2	113,880	+3,038	+5.6	15	1	53,563	-597	-1.1
	16	1	86,026	+32,124	+59.6	16	1	51,055	-3,105	-5.7
	17	1	51,234	-2,668	-4.9	17	2	98,598	-4,861	-9.0
	18	1	53,563	-339	-1.6	18	1	65,622	+11,462	+21.2
	19	1	42,233	-11,669	-21.6	19	1	64,956	+10,796	+19.9
	20	1	65,622	+11,720	+21.7	20	1	53,986	-174	-1.3
	21	2	83,313	-12,245	-22.7	21	2	114,280	+2,980	+5.5
	22	1	46,800	-7,102	-13.2	22	1	42,761	-11,399	-21.0
	23	3	241,676	+26,657	+19.4	23	1	64,982	+10,822	+20.0
	24	1	64,956	+11,054	+20.5	24	1	48,898	-5,262	-9.7

(continued on following page)



TABLE 2: (continued)

County	Before 1964 reapportionment (1)					After 1964 reapportionment (1)				
	District number	Number of representatives	Population	Deviation from average per representative		District number	Number of representatives	Population	Deviation from average per representative	
				Number	Percent				Number	Percent
Philadelphia (cont'd)	25	1	57,987	+4,085	+7.6	25	2	137,260	+14,470	+26.7
	26	1	36,459	-17,443	-32.4	26	2	120,210	+5,945	+11.0
	27	1	52,246	-1,656	-3.1	-	-	-	-	-
	28	1	50,896	-3,006	-5.6	-	-	-	-	-
	29	1	66,443	+12,541	+23.3	-	-	-	-	-
	30	2	80,623	-13,590	-25.2	-	-	-	-	-
	31	1	57,507	+3,605	+6.7	-	-	-	-	-
Pike	1	1	9,158	-47,744	-88.6	1	1	9,158	-45,002	-83.1
Potter	1	1	16,483	-37,419	-69.4	1	1	16,483	-37,677	-69.6
Schuylkill	1	2	82,652	-12,576	-23.3	1	1	64,196	+10,036	+18.5
	2	2	90,375	-8,714	-16.2	2	2	108,831	+255	+5
Snyder	1	1	25,922	-27,980	-51.9	1	1	25,922	-28,238	-52.1
Somerset	1	2	77,450	-15,177	-28.2	1	1	77,450	+23,290	+43.0
Sullivan	1	1	6,251	-47,651	-88.4	1	1	6,251	-47,909	-88.5
Susquehanna	1	1	33,137	-20,765	-38.5	1	1	33,137	-21,023	-38.8
Tioga	1	1	36,614	-17,288	-32.1	1	1	36,614	-17,546	-32.4
Union	1	1	25,646	-28,256	-52.4	1	1	25,646	-28,514	-52.6
Venango	1	1	65,295	+11,393	+21.1	1	1	65,295	+11,135	+20.6
Warren	1	1	45,582	-8,320	-15.4	1	1	45,582	-8,578	-15.8
Washington	1	2	108,030	+113	+2	1	2	108,030	-145	-.3
	2	2	109,241	+719	+1.3	2	2	109,241	+460	+.9
Wayne	1	1	28,237	-25,665	-47.6	1	1	28,237	-25,923	-47.9
Westmoreland	1	1	61,895	+7,993	+14.8	1	1	64,337	+10,177	+18.6
	2	2	150,893	+21,545	+40.0	2	1	58,224	+4,064	+7.5
	3	2	139,841	+16,019	+29.7	3	1	60,717	+6,557	+12.1
	-	-	-	-	-	4	1	57,659	+3,499	+6.5
	-	-	-	-	-	5	1	49,827	-4,333	-8.0
	-	-	-	-	-	6	1	61,865	+7,705	+14.2
Wyoming	1	1	16,813	-37,089	-68.8	1	1	16,813	-37,347	-69.0
York	1	1	54,504	+602	+1.1	1	1	54,504	+344	+6
	2	1	64,774	+10,872	+20.2	2	1	64,774	+10,614	+19.6
	3	1	57,176	+3,274	+6.1	3	1	57,176	+3,016	+5.6
	4	1	61,882	+7,980	+14.8	4	1	61,882	+7,722	+14.2
Average population per Representative			53,902					54,160		
Average deviation from equal representation				10,006	18.6				7,300	13.5

(1) Act of January 9, 1964.

(2) Population as shown is as certified by the U. S. Bureau of the Census to Congress and the President. Subsequent to certification, the U.S. Bureau of the Census discovered that the population of Allegheny and of the State had been understated by 1,234.

Source: Compiled by the Bureau of Statistics, Department of Internal Affairs, from the Act of the Pennsylvania General Assembly, No. 1, January 9, 1964 and the 1960 Census of Population.

State Senate Apportionment and Districting

Tables 3A and 3B show for each State senate district the population as of April 1960, the voter registration for the two major parties, votes cast for senate candidates by party and senators elected in the November 6, 1962 (even-numbered districts) and the November 3, 1964 (odd-numbered districts) elections.

Figure 2 shows the boundaries of each State senate district.

Table 4 shows for each State senate district the population as of April 1, 1960, the deviation of district population from the state-wide average per district before the 1964 reapportionment, and corresponding data after the 1964 reapportionment. The population of those districts with a plus deviation are under-represented and those with a minus deviation are over-represented.

Before the 1964 reapportionment, district No. 9 had a population of 553,154 or 2-1/2 times the state-wide average of 226,387 per district. The deviation from the state-wide average was +326,769 or +144.3 percent. At the other extreme, District No. 23 had a population of 104,875 or less than half the state-wide average of 226,387. The deviation from the state-wide average was -121,512 or -53.7 percent. Stated differently, the Senator from District No. 9 represented 5 times as many persons as the Senator from District No. 23.

After the 1964 reapportionment, District No. 39 has a population of 352,629 or over 1-1/2 times the state-wide average of 226,387. The deviation from the state-wide average is +126,242 or +55.8 percent. District No. 14 has a deviation of -96,536 or -42.6 percent. The Senator from District No. 39 would represent 3 times as many persons as the Senator from District No. 14.

The average deviation from equal representation was reduced from 90,698 or 40.1 percent before the 1964 reapportionment to 36,729 or 16.2 percent after reapportionment.

The Supreme Court of Pennsylvania, in *Butcher v. Bloom*, ruled:

"Act of January 9, 1964 No. 2 which provides for reapportionment of the Senate, by substantially diluting the right to vote of individuals in some districts when compared with the rights of voters in other districts, fails to meet the requirements of the Fourteenth Amendment to the Constitution of the United States".

To a considerable extent the magnitude of the deviations from equal representation that exist after the 1964 reapportionment result from the interpretation of Section 16 of Article II of the Pennsylvania Constitution which provides:

"The State shall be divided into fifty senatorial districts of compact and contiguous territory as nearly equal in population as may be, and each district shall be entitled to elect one Senator. Each county containing one or more ratios of population shall be entitled to one Senator for each ratio, and to an additional Senator for a surplus of population exceeding three-fifths of a ratio but no county shall form a separate district unless it shall contain four-fifths of a ratio, except where the adjoining counties are each entitled to one or more Senators, when such county may be assigned a Senator on less than four-fifths and exceeding one-half of a ratio; and no county shall be divided unless entitled to two or more Senators. No city or county shall be entitled to separate representation exceeding one-sixth of the whole number of Senators. No ward, borough or township shall be divided in the formation of a district. The senatorial ratio shall be ascertained by dividing the whole population of the State by the number fifty".

Regarding Article II, Section 16 of the State Constitution, the State Supreme Court ruled that, "senatorial reapportionment legislation must maintain the integrity of counties and other political subdivisions, insofar as possible, and must provide for compact districts of contiguous territory, subject always to the overriding objective and mandate that such districts shall be 'as nearly equal in population as may be'. We must emphasize that, if necessary, any political subdivision or subdivisions may be divided or combined in the formation of districts where the population principle cannot otherwise be satisfied. Furthermore, the number of senators per political subdivision may not be limited if such limitation violates the equal-population principle".

TABLE 3A : POPULATION, VOTER REGISTRATION, AND VOTES CAST FOR MAJOR CANDIDATES FOR THE STATE SENATE IN THE GENERAL ELECTION: NOVEMBER 3, 1964

(Elections for 4 year terms for state senator are held in even years alternatively for the even-numbered and odd-numbered districts. The 1964 election was held in the odd-numbered districts.)

District number	County, area or district	Population April 1, 1960	Voter registration November, 1964		Candidates and votes received			
			Democratic	Republican	Democratic		Republican	
1	Philadelphia	260,767	81,244	50,710	DiSilvestro	77,345	Bauer	32,410
3	Philadelphia	251,415	87,359	41,823	Johanson	77,459	Cosgrove	30,100
5	Philadelphia	236,148	84,630	69,238	McGlinchey	82,196	Barbera	54,860
7	Philadelphia	266,242	96,853	32,788	Weiner	90,692	Rymer	13,215
9	Delaware	255,888	67,247	227,825	Nauer	115,747	Bell	137,495
11	Berks	275,414	81,702	46,703	Yatron	71,336	Boyer, Jr.	37,471
13	Lancaster	278,359	22,862	58,354	Hume	43,767	Snyder	60,884
15	Dauphin	220,255	30,466	76,480	Killian	39,587	Lentz	48,551
17	Montgomery (part)	253,888	26,055	53,465	Ryan	47,845	Johnson	60,409
19	Chester	210,608	28,262	72,320	Mitman	37,791	Ware, III	50,618
21	Butler - Lawrence	227,604	46,091	58,475	Oesterling	48,649	McCracken, Jr.	40,590
23	Bradford - Sullivan - Susquehanna	147,740	23,861	49,576	Dailey, Jr.	23,962	Madigan	36,371
25	Tioga - Wyoming							
25	Cameron - Clinton - McKean	161,787	26,260	46,173	Homan	26,507	Berger	31,974
27	Potter - Warren							
27	Northumberland - Snyder - Union	155,706	28,753	47,883	Gillespie	28,178	Davis	34,399
29	Lebanon - Schuylkill	263,880	36,106	63,379	Nagle (1)	13,454	Wagner (1)	19,531
31	Cumberland - Juniata - Perry	211,620	40,868	59,622	Miller	35,265	Wade	47,929
33	Mifflin							
33	Adams - Franklin	140,078	29,329	34,966	Lupp	23,572	Hawbaker	29,077
35	Cambria	203,283	56,192	39,901	Haluska	35,950	Green, Jr.	45,085
37	Allegheny (part)	236,359	56,081	67,702	Price	44,871	Ewing	64,039
39	Westmoreland	352,629	117,551	56,948	Mahady	93,567	Hunger	53,070
41	Armstrong - Indiana - Jefferson	201,682	42,336	55,724	Stapleton	39,076	Pechan	40,873
43	Allegheny (part)	237,367	89,277	28,600	Devlin	70,167	McSwigan	25,305
45	Allegheny (part)	222,104	85,773	26,744	Staisey	72,456	Watson	21,973
47	Beaver	206,948	57,018	39,515	Kline	53,159	McCune	29,926
49	Erie	250,682	63,984	59,154	Sesler	58,671	Lamberton	44,320

(1) Does not include votes received in Schuylkill county because of an election contest.

TABLE 3B: POPULATION, VOTER REGISTRATION, AND VOTES FOR MAJOR CANDIDATES FOR THE STATE SENATE IN THE GENERAL ELECTION: NOVEMBER 6, 1962

(Elections for 4 year terms for state senators are held in even years alternatively for the odd-numbered and even-numbered districts. In 1962 the election was held in the even-numbered districts, except for districts 13 and 37.)

District number	County, area or district	Population April 1, 1960	Voter registration November, 1962		Candidates and votes received			
			Democratic	Republican	Democratic		Republican	
2	Philadelphia	81,095	19,500	13,819	Donolow	18,781	Upshur, Jr.	13,031
4	Philadelphia	402,161	127,069	61,831	McCreesh	94,866	Ide	47,324
6	Philadelphia	421,052	124,089	94,201	Silvert	102,210	Nahill	77,617
8	Philadelphia	523,527	164,782	120,100	Mullin	128,740	Walls	108,330
10	Bucks	308,567	62,242	76,254	Valimont	47,344	Keller	58,887
12	Montgomery	516,682	66,061	192,378	Zucker	71,317	Propert	131,683
13	Lancaster (part) (1)	182,366	22,061	59,204	Murphy, Jr.	19,360	Snyder	43,442
14	Carbon, Monroe, Pike, and Wayne	129,851	35,774	34,908	Niehoff	22,692	Scott	32,807
16	Lehigh	227,536	53,113	52,164	Diefenderfer	34,745	Van Sant	44,433
18	Northampton	201,412	58,589	33,394	Rooney	38,436	Pharo	28,376
20	Luzerne	169,624	48,108	54,359	Cohn	34,760	Flack	37,462
22	Lackawanna	234,531	101,510	52,353	Casey	65,910	Ligi	56,655
24	Columbia, Lycoming, Montour, and Sullivan	185,837	45,164	47,937	Plankenhorn	29,964	Confair	44,264
26	Cameron, Clarion, Clinton, Elk, and Forest	124,426	30,071	29,996	Hall	26,303	Varnor	21,728
28	York	238,336	62,748	45,318	Seyler	36,575	Beers	43,696
30	Blair and Huntingdon	176,727	31,374	49,184	Williams	23,106	Brumbaugh	40,153
32	Fayette	169,340	58,709	22,042	Kalman	34,209	Strong	23,418
34	Centre and Clearfield	160,114	33,269	35,549	Hays	25,791	Bailey	29,540
36	Bedford, Fulton, and Somerset	130,498	34,203	35,099	Blgan	22,848	Stroup	32,616
37	Indiana and Jefferson (2)	122,158	29,317	33,919	Tomb, Jr.	24,582	Morris	26,569
38	Allegheny (part)	126,345	55,731	13,539	Sarrsf	32,993	Sabas	14,948
40	Allegheny (part)	332,140	96,978	79,739	Ludwig	54,684	Fleming	80,342
42	Allegheny (part)	109,140	40,512	12,820	McGinnis	22,718	Waldron	15,075
44	Allegheny (part)	385,121	121,340	68,732	Ripp	72,982	McGregor	76,969
46	Greene and Washington	256,695	88,742	36,405	Lane	59,078	Bradshaw	36,916
48	Venango and Warren	110,877	17,773	30,875	Conway	13,218	Frame	21,795
50	Crawford and Mercer	205,475	42,528	50,751	Blair	31,471	Mahany	37,192

(1) Special election for senator who resigned.

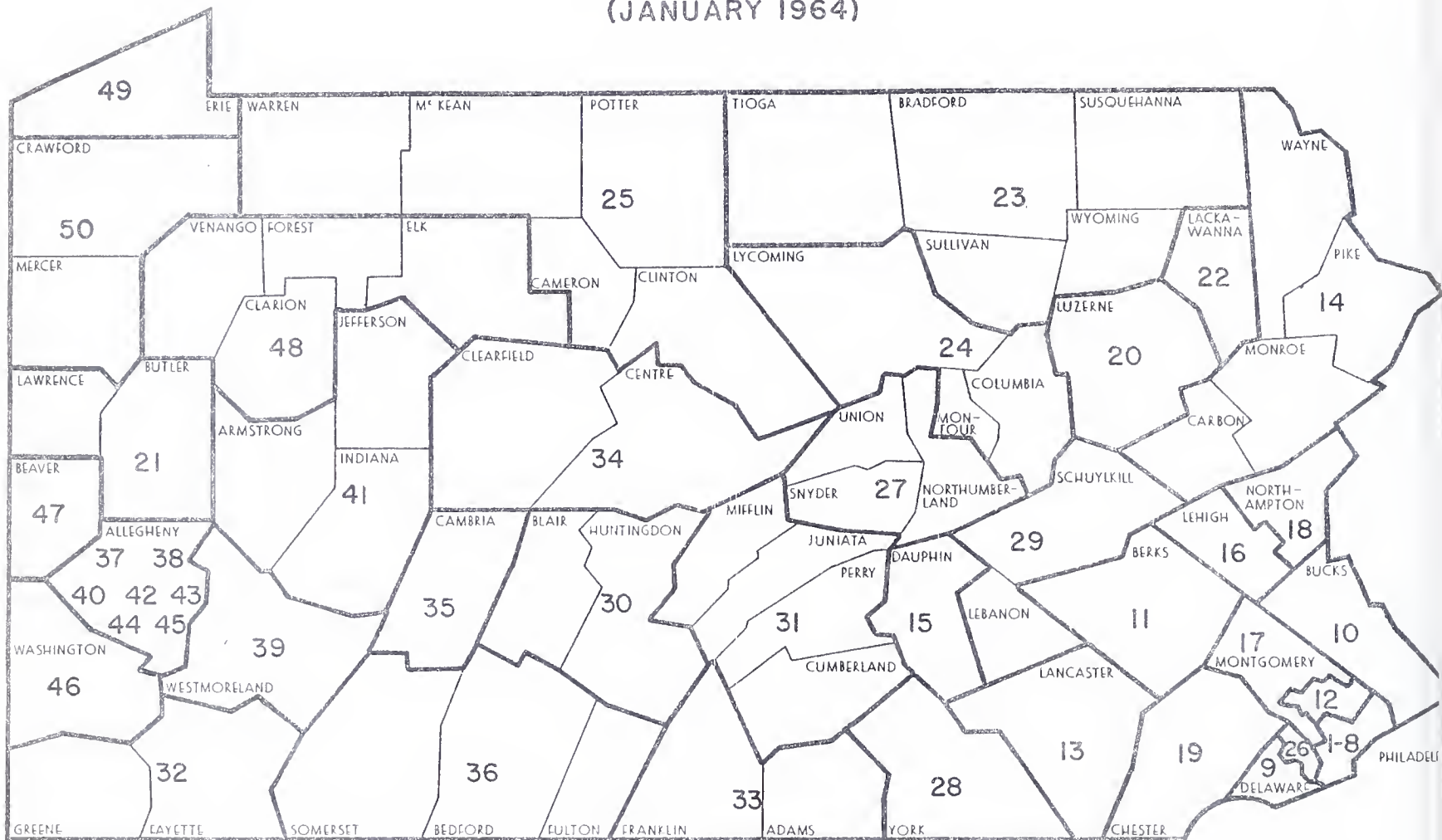
(2) Special election for senator who died.

Source: Compiled by the Bureau of Statistics, Department of Internal Affairs, from information supplied by the Bureau of Commissions and Elections, Pennsylvania Department of State.

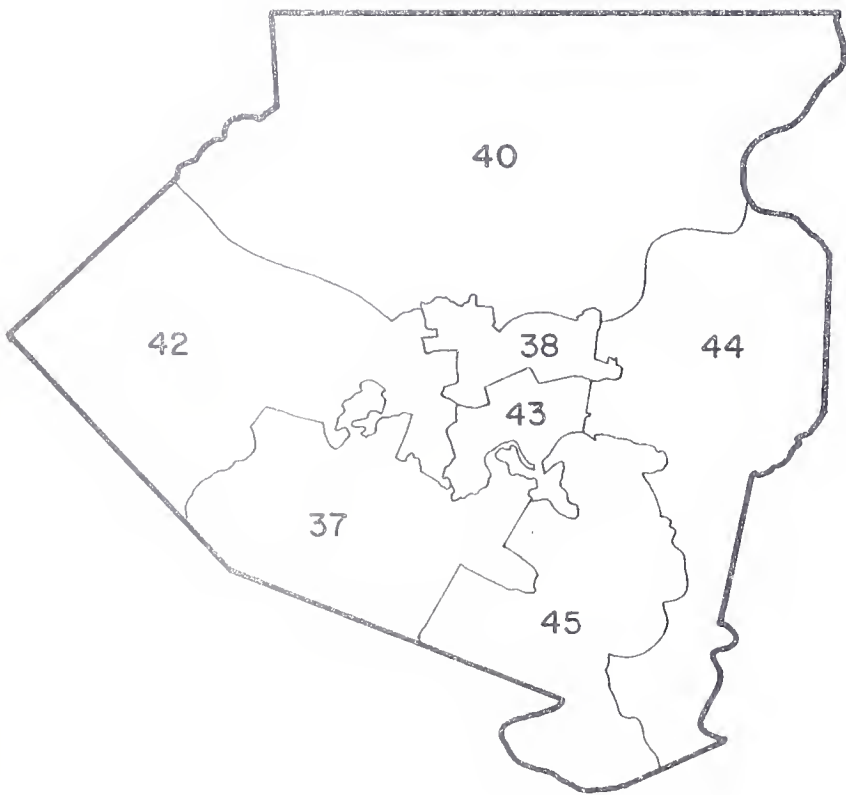


# STATE SENATORIAL DISTRICTS

(JANUARY 1964)



## ALLEGHENY COUNTY



## PHILADELPHIA COUNTY

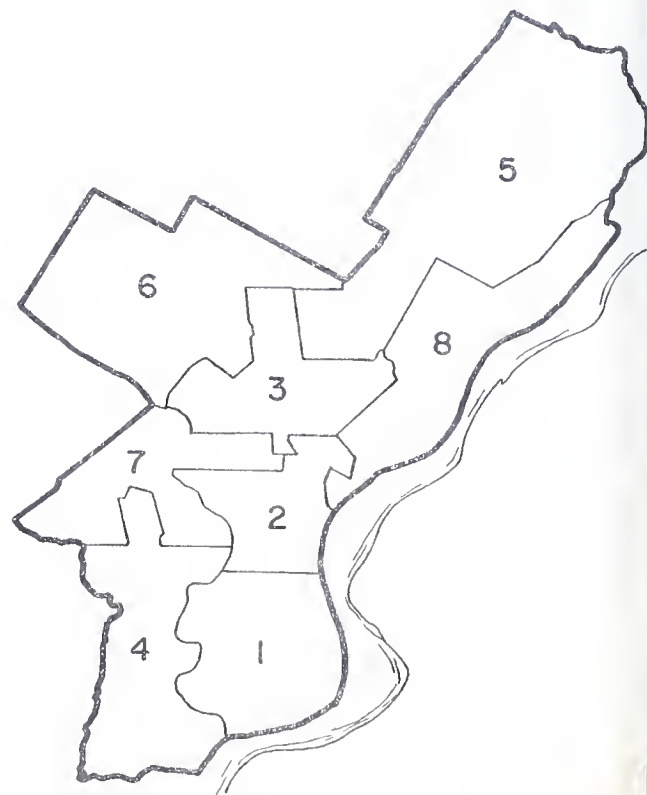


TABLE 4: DEVIATION FROM PRINCIPLE OF EQUAL REPRESENTATION,  
PENNSYLVANIA SENATORIAL DISTRICTS

Before 1964 reapportionment (1)				After 1964 reapportionment (1)			
District number	Population	Deviation from average		District number	Population	Deviation from average	
		Number	Percent			Number	Percent
Total	11,319,366				11,319,366		
1	209,546	-16,841	-7.4	1	260,767	+34,380	+15.2
2	81,095	-145,292	-64.2	2	255,869	+29,482	+13.0
3	51,793	-174,594	-77.1	3	251,415	+25,028	+11.1
4	402,161	+175,774	+77.6	4	241,032	+14,645	+6.5
5	112,754	-113,633	-50.2	5	236,148	-9,761	+4.3
6	421,052	+194,665	+86.0	6	242,667	+16,280	+7.2
7	200,584	-25,803	-11.4	7	266,242	+39,855	+17.6
8	523,527	+297,140	+131.3	8	248,372	+21,985	+9.7
9	553,154	+326,767	+144.3	9(2)	255,888	+29,501	+13.0
10	308,567	+82,180	+36.3	10	308,567	+82,180	+36.3
11	275,414	+49,027	+21.7	11	275,414	+49,027	+21.7
12	516,682	+290,295	+128.2	12	262,794	+36,407	+16.1
13	182,366	-44,021	-19.4	13	278,359	+51,972	+23.0
14	129,851	-96,536	-42.6	14	129,851	-96,536	-42.6
15	220,255	-6,132	-2.7	15	220,255	-6,132	-2.7
16	227,536	+1,149	+5	16	227,536	+1,149	+5
17	186,846	-39,541	-17.5	17	253,888	+27,501	+12.1
18	201,412	-24,975	-11.0	18	201,412	-24,975	-11.0
19	210,608	-15,779	-7.0	19	210,608	-15,779	-7.0
20	169,624	-56,763	-25.1	20	346,972	+120,585	+53.3
21	177,348	-49,039	-21.7	21	227,604	+1,217	+5
22	234,531	+8,144	+3.6	22	234,531	+8,144	+3.6
23	104,875	-121,512	-53.7	23	147,740	-78,647	-34.7
24	185,837	-40,550	-17.9	24	179,586	-46,801	-20.7
25	107,614	-118,773	-52.5	25	161,787	-64,600	-28.5
26	124,426	-101,961	-45.0	26(2)	297,266	+70,879	+31.3
27	155,706	-70,681	-31.2	27	155,706	-70,681	-31.2
28	238,336	+11,949	+5.3	28	238,336	+11,949	+5.3
29	173,027	-53,360	-23.6	29	263,880	+37,493	+16.6
30	176,727	-49,660	-21.9	30	176,727	-49,660	-21.9
31	211,620	-14,767	-6.5	31	211,620	-14,767	-6.5
32	169,340	-57,047	-25.2	32	208,764	-17,623	-7.8
33	140,078	-86,309	-38.1	33	140,078	-86,309	-38.1
34	160,114	-66,273	-29.3	34	160,114	-66,273	-29.3
35	203,283	-23,104	-10.2	35	203,283	-23,104	-10.2
36	130,498	-95,889	-42.4	36	130,498	-95,889	-42.4
37	122,158	-104,229	-46.0	37	236,359	+9,972	+4.4
38	126,345	-100,042	-44.2	38	233,003	+6,616	+2.9
39	352,629	+126,242	+55.8	39	352,629	+126,242	+55.8
40	332,140	+105,753	+46.7	40(3)	240,399	+14,012	+6.2
41	194,163	-32,224	-14.2	41	201,682	-24,705	-10.9
42	109,140	-117,247	-51.8	42	226,269	-118	-.1
43	157,955	-68,432	-30.2	43	237,367	+10,980	+4.9
44	385,121	+158,734	+70.1	44	233,086	+6,699	+3.0
45	517,886	+291,499	+128.8	45	222,104	-4,283	-1.9
46	256,695	+30,308	+13.4	46	217,271	-9,116	-4.0
47	319,913	+93,526	+41.3	47	206,948	-19,439	-8.6
48	110,877	-115,510	-51.0	48(2)	144,516	-81,871	-36.2
49	250,682	+24,295	+10.7	49	250,682	+24,295	+10.7
50	205,475	-20,912	-9.2	50	205,475	-20,912	-9.2
Average population per Senator	226,387				226,387		
Average deviation from equal representation		90,698	40.1			36,729	16.2

(1) Act of January 9, 1964.

(2) Population as shown effective November 30, 1966.

(3) Population as shown is as certified by the U. S. Bureau of the Census to Congress and the President. Subsequent to certification, the U. S. Bureau of the Census discovered that the population of Allegheny and of the State had been understated by 1,234.

Source: Compiled by the Bureau of Statistics, Department of Internal Affairs, from the Act of the Pennsylvania General Assembly, No. 2, January 9, 1964 and the 1960 Census of Population.

# Congressional Apportionment and Districting

Table 5 shows for each congressional district the population as of April 1, 1960, the voter registration for the two major parties, votes cast for congressional candidates by party and congressmen elected in the November 3, 1964 election.

Figure 3 shows the boundaries for each congressional district.

Table 6 shows for each congressional district the population as of April 1, 1960, the deviation of the population from the state-wide average per district before the 1962 reapportionment and the corresponding data after the 1962 reapportionment. The population of those districts with a plus deviation are under-represented and those with a minus deviation are over-represented.

Before the 1962 reapportionment, District No. 7 had a population of 555,154 or nearly 1-1/2 times the state-wide average of 377,312 per congressman. The deviation from the state-wide average was +175,842 or +46.6 percent. At the other extreme, District No. 1 had a population of 260,767 or less than three-fourths of the state-wide average of 377,312. The deviation was -116,545 or -30.9 percent. Stated differently, the Congressman from District No. 7 represented 2 times as many persons as the Congressman from District No. 1.

After the 1962 reapportionment, District No. 7 has a population of 553,154 or 1-1/3 times the state-wide average of 419,236. The deviation from the state-wide average is +133,918 or +31.9 percent. District No. 15 has a deviation of -116,210 or -27.7 percent. The Congressman from District No. 7 represents 2 times as many persons as the Congressman from District No. 15.

The average deviation from equal representation was reduced from 70,711 or 18.7 percent before the 1962 apportionment to 47,067 or 11.2 percent after apportionment.

TABLE 5: POPULATION, VOTER REGISTRATION, AND VOTES CAST FOR U.S. CONGRESSMEN IN THE 27 CONGRESSIONAL DISTRICTS IN PENNSYLVANIA: NOVEMBER 3, 1964 GENERAL ELECTION

District number	Counties included	Population 1960	November 1964 registration		Candidates and votes received			
			Democratic	Republican	Democratic		Republican	
	Total, the state	11,319,366	2,884,396	2,759,565		2,613,413		2,062,907
1	Philadelphia (part)	418,192	135,518	76,949	Barrett	129,471	Bello	50,780
2	Philadelphia (part)	397,995	135,635	56,156	Nix, Sr.	125,100	Howell	30,801
3	Philadelphia (part)	406,993	119,735	70,311	Eyrne	111,885	Poserina, Jr.	43,471
4	Philadelphia (part)	387,156	137,665	99,250	Toll	135,681	Cavanaugh	75,901
5	Philadelphia (part)	392,176	126,680	79,895	Green, III	117,049	Rovner	62,446
6	Berks - Northumberland							
	Schuylkill	552,579	140,360	141,453	Rhodes (1)	97,552	Bamford (1)	56,685
7	Delaware	553,154	67,247	227,825	Bachman	123,750	Watkins	129,572
8	Bucks - Lehigh	536,103	121,202	131,457	Samuel	107,670	Curtin	112,472
9	Chester - Lancaster	488,967	64,440	157,418	O'Brien	81,823	Dague	111,545
10	Bradford - Lackawanna - Sullivan							
	Susquehanna - Wayne - Wyoming	373,894	116,450	103,291	Haggerty	88,082	McDade	90,903
11	Luzerne	346,972	81,948	109,016	Flood	116,875	Thomas	34,057
12	Bedford - Blair - Franklin - Fulton							
	Huntingdon - Mifflin - Somerset	439,745	87,198	116,841	Stephens	68,703	Whalley	97,114
13	Montgomery	516,682	72,734	199,307	Searle	96,849	Schweiker	139,817
14	Allegheny (part)	390,512	146,763	48,716	Moorhead	117,525	Capozzi	39,513
15	Carbon - Monroe - Northampton							
	Pike	303,026	88,696	58,271	Rooney	81,062	McCormick	41,656
16	Dauphin - Juniata - Lebanon							
	Perry	353,564	52,408	116,486	Stefanic	50,509	Kunkel	90,331
17	Cameron - Centre - Clinton							
	Columbia - Lycoming - Montour							
	Potter - Snyder - Tioga - Union	408,036	76,884	111,847	Plankenhorn	66,266	Schneebeli	91,504
18	Allegheny (part)	409,291	109,923	108,092	Reed	71,621	Corbett	119,938
19	Adams - Cumberland - York	415,058	95,694	96,400	Craley, Jr.	82,498	Goodling	79,809
20	Allegheny (part)	404,997	152,150	51,863	Holland	126,846	Bryan	43,591
21	Westmoreland	352,629	117,551	56,948	Dent	97,379	Schooley, Jr.	50,513
22	Armstrong - Cambria - Indiana	358,173	88,618	81,572	McCaffrey	61,482	Saylor	81,400
23	Clarion - Clearfield - Elk - Forest							
	Jefferson - McKean - Venango							
	Warren	372,941	72,421	97,077	Still	62,932	Johnson	76,575
24	Crawford - Erie - Mercer	456,157	106,559	109,337	Vigorito	92,612	Weaver	89,828
25	Beaver - Butler - Lawrence	434,552	103,109	97,990	Clark	121,140	Loth	51,071
26	Fayette - Greene - Washington	426,035	140,861	61,316	Morgan	109,532	Riggle	51,219
27	Allegheny (part)	423,787	125,947	94,481	Young	71,519	Fulton	120,395

(1) Does not include votes received in Schuylkill county because of an election contest.

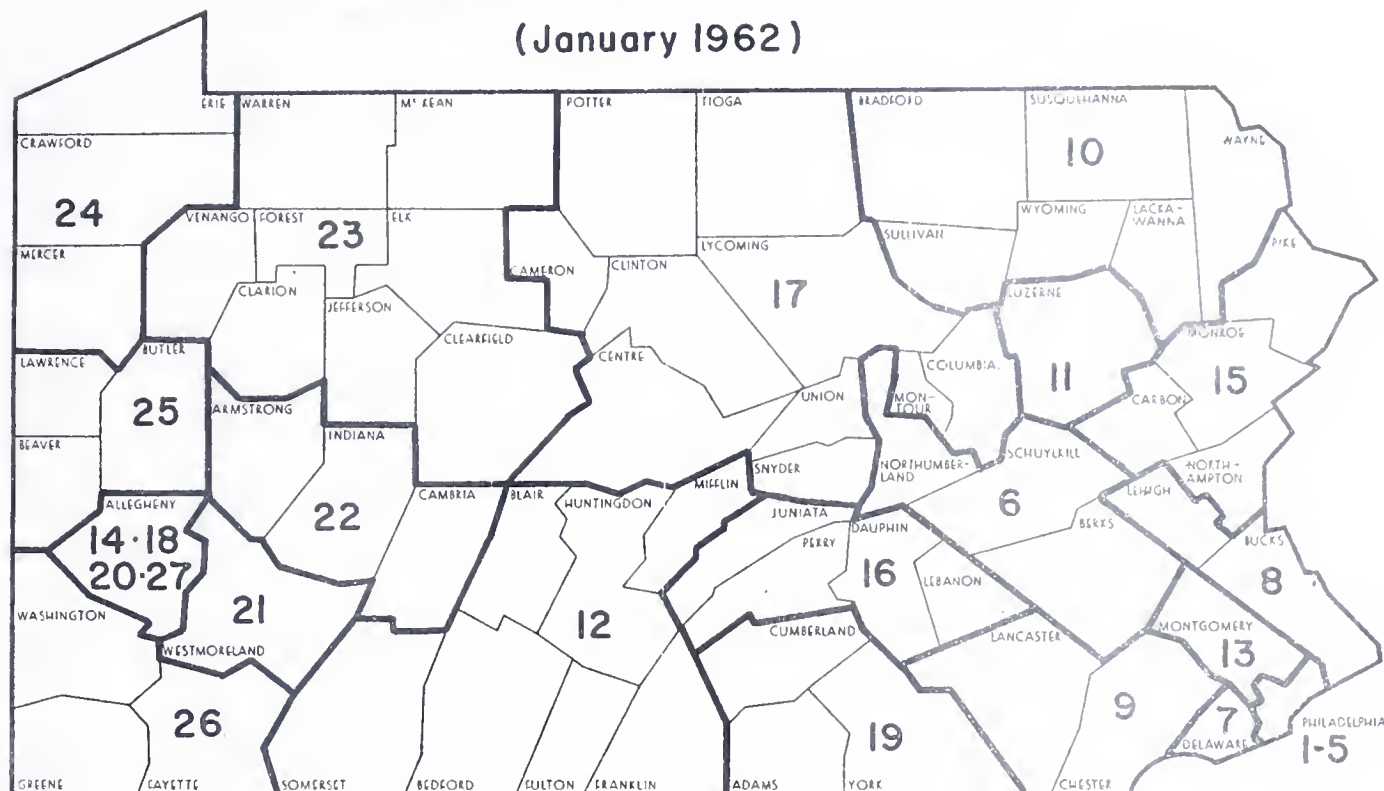
Source: Compiled by the Bureau of Statistics, Department of Internal Affairs, from information supplied by the Bureau of Commissions and Elections, Pennsylvania Department of State.



Figure 3

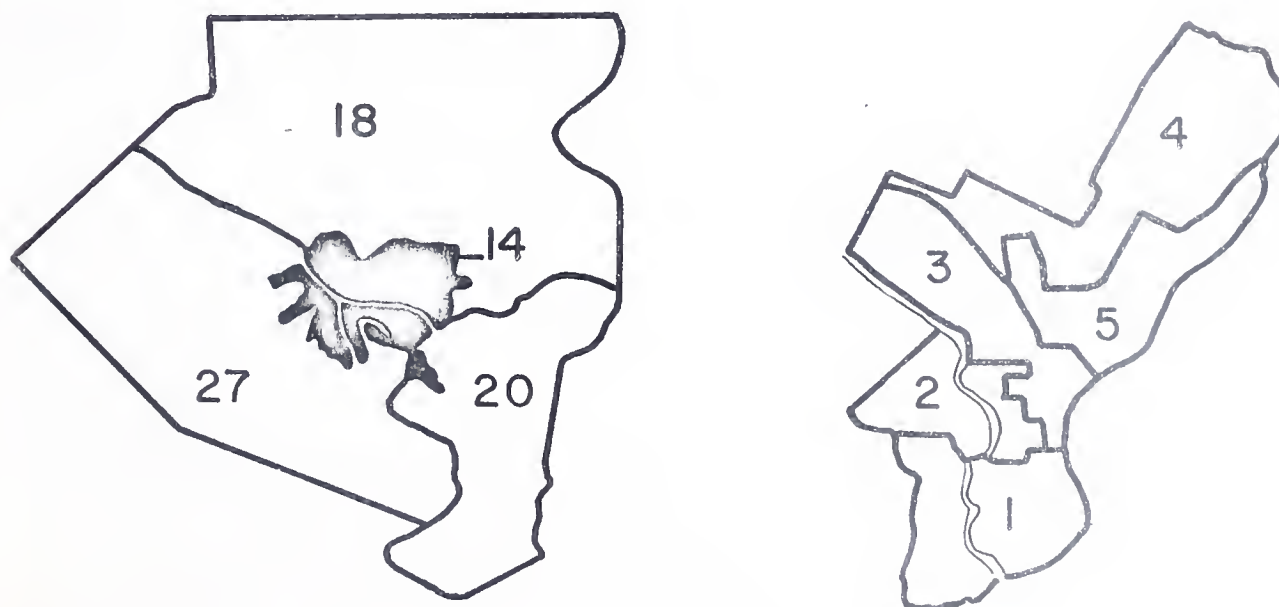
# CONGRESSIONAL DISTRICTS

(January 1962)



## CONGRESSIONAL DISTRICTS IN ALLEGHENY AND PHILADELPHIA COUNTIES

(January 1962)



Source: Act of the General Assembly No. 1 effective 29th day of January, A. D. 1962.

TABLE 6: DEVIATION FROM PRINCIPLE OF EQUAL REPRESENTATION,  
PENNSYLVANIA CONGRESSIONAL DISTRICTS

Before 1962 reapportionment (1)				After 1962 reapportionment (1)			
District number	Population	Deviation from average		District number	Population	Deviation from average	
		Number	Percent			Number	Percent
Total	11,319,366				11,319,366		
1	260,767	-116,545	-30.9	1	418,192	-1,044	-.2
2	344,174	-33,138	-8.8	2	397,995	-21,241	-5.1
3	273,911	-103,401	-27.4	3	406,993	-12,243	-2.9
4	314,909	-62,403	-16.5	4	387,156	-32,080	-7.7
5	461,287	+83,975	+22.3	5	392,176	-27,060	-6.5
6	347,464	-29,848	-7.9	6	552,579	+133,343	+31.8
7	553,154	+175,842	+46.6	7	553,154	+133,918	+31.9
8	536,103	+158,791	+42.1	8	536,103	+116,867	+27.9
9	488,967	+111,655	+29.6	9	488,967	+69,731	+16.6
10	328,127	-49,185	-13.0	10	373,894	-45,342	-10.8
11	346,972	-30,340	-8.0	11	346,972	-72,264	-17.2
12	277,165	-100,147	-26.5	12	439,745	+20,509	+4.9
13	516,682	+139,370	+36.9	13	516,682	+97,446	+23.2
14	275,414	-101,898	-27.0	14	390,512	-28,724	-6.9
15	293,868	-83,444	-22.1	15	303,026	-116,210	-27.7
16	353,564	-23,748	-6.3	16	353,564	-65,672	-15.7
17	332,813	-44,499	-11.8	17	408,036	-11,200	-2.7
18	354,043	-23,269	-6.2	18	409,291	-9,945	-2.4
19	415,058	+37,746	+10.0	19	415,058	-4,178	-1.0
20	297,384	-79,928	-21.2	20	404,997	-14,239	-3.4
21	352,629	-24,683	-6.5	21	352,629	-66,607	-15.9
22	358,173	-19,139	-5.1	22	358,173	-61,063	-14.6
23	291,407	-85,905	-22.8	23	372,941	-46,295	-11.0
24	456,157	+78,845	+20.9	24	456,157	+36,921	+8.8
25	434,552	+57,240	+15.2	25	434,552	+15,316	+3.7
26	426,035	+48,723	+12.9	26	426,035	+6,799	+1.6
27(2)	472,113	+94,801	+25.1	27(2)	423,787	+4,551	+1.1
28	328,164	-49,148	-13.0				
29	426,742	+49,430	+13.1				
30	401,568	+24,256	+6.4				
Average population per Congressman	377,312				419,236		
Average deviation from equal representation		70,711	18.7			47,067	11.2

(1) Act of January 29, 1962.

(2) Population as shown is as certified by the U. S. Bureau of the Census to Congress and the President. Subsequent to certification, the U. S. Bureau of the Census discovered that the population of Allegheny and of the State had been understated by 1,234.

Source: Compiled by the Bureau of Statistics, Department of Internal Affairs, from the Act of the Pennsylvania General Assembly, No. 1, January 29, 1962 and the 1960 Census of Population.

## APPENDIX

A. Recent Court Cases On Apportionment

Butcher v. Bloom, U 415 Pa. 438 (1964)  
 Drew v. Scranton, 229 F. Supp. 310 (1964)  
 Baker v. Carr, 369 U.S. 186 (1962)  
 Reynolds v. Sims, Vann V. Baggett, McConnell  
 v. Baggett, 377 U.S. 533 (1964)  
 Maryland Committee for Fair Representation v.  
 Tawes, 377 U.S. 656 (1964)  
 Davis v. Mann, 377 U.S. 678 (1964)  
 Roman v. Sincock, 377 U.S. 713 (1964)  
 Lucas v. 44th General Assembly of Colorado,  
 377 U.S. 713 (1964)

B. Selected References On Apportionment

Baker, Gordon E., State Constitutions: Reapportionment,  
 National Municipal League, Carl H. Pforzheimer  
 Building, 47 East 68th Street, New York, New York 10021.

Bcyd, William J. D., Apportionment Facts, reproduced  
 from National Civic Review, November, 1964 National  
 Municipal League, New York.

Court Decisions on Legislative Apportionment, series,  
 National Municipal League, New York, Volume XII  
 contains the Pennsylvania case, Butcher v. Bloom  
 (September 29, 1964.)

De Grazia, Alfred, Apportionment and Representative  
 Government, Proeger, New York, 1963.

Jewell, Malcolm Edwin, ed., The Politics of Reappor-  
 tionment, Atherton Press, New York, 1962.

Lamb, Karl A., Pierce, William J., and White, John  
 P., Apportionment and Representative Institutions.  
The Michigan Experience, Institute for Social Science  
 Research, Washington, 1963.

National Municipal League, Compendium on Legislative  
 Apportionment: A collection of statistics and appraisals  
from local non-official authorities in 50 states relating  
to inequalities in legislative and congressional repre-  
sentation of voters., 2nd ed., New York, 1962.

Reapportionment and Redistricting,  
 Papers presented at the Annual Conference of the  
 Pennsylvania Political Science and Public Administration  
 Association in Harrisburg, April 6 and 7, 1962. The  
 Institute of Public Administration, The Pennsylvania  
 State University, University Park, Pennsylvania, 1962.  
 \$1.00.



B. Selected References On Apportionment (continued)

Reapportionment: A Year in Review

60 pages, \$1.50.

Reapportionment: Second Year in Review

84 pages, \$2.00.

Both volumes available for \$3.00. National Municipal League, New York.

Articles on Apportionment — Selected from Reader's Guide to Periodical Literature, Volume and Supplements covering period March, 1963 - January, 1965. See Reader's Guide for additional sources.

"After Redistricting Decision: Where States May See Changes in Taxes, Welfare, Highways," USS. News, Volume 57, pages 34-36, July 6, 1964.

"Battle over State Reapportionment," (pro and con discussion) Senior Scholastic, Volume 85, pages 12-13, October 28, 1964.

"District Revamping Poses New Woe," Business Week, p. 20, December 26, 1964.

Dixon, R. G., "Reapportionment: What the Court Didn't Do," The Reporter, Volume 31, pages 39-41, October 8, 1964.

"Reapportionment in the Supreme Court and Congress: Constitutional Struggle for Fair Representation," Michigan Law Review, Volume 63, No. 2, p. 209, December 1964.

Greenewald, D., and Bickel, A. M., "Reapportionment," New Republic, Volume 151, pages 10-11, December 26, 1964.

Hacker, A., "One Man, One Vote, Yes or No?," New York Times Magazine, page 31, November 8, 1964.

"How Reapportionment Threatens Business," Nation's Business, Volume 52, pages 94-97, December, 1964.

Kauper, P. G., "Some Comments on the Reapportionment Cases," Michigan Law Review, Volume 63, No. 2, p. 243, December, 1964.

McKay, R. B., "Court Congress, and Reapportionment," Michigan Law Review, Volume 63, No. 2, p. 255, December, 1964.

Moses, R., "Robert Moses Warns Against Mob Rule," Nation's Business, Volume 52, pages 100-102, December, 1964.

"One Man, One Vote: What It Means," U.S. News, Volume 57, pages 62-64, October 19, 1964.

B. Selected References On Apportionment (continued)

"Quiet Revolution in State Government: Reapportionment and Redistricting," with chart, Senior Scholastic, Volume 83, pages 13-15, November 22, 1963.

Starr, S., "Reapportionment, Big Issue of the 60's," Senior Scholastic, Volume 85, pages 6T-7T, September 30, 1964.

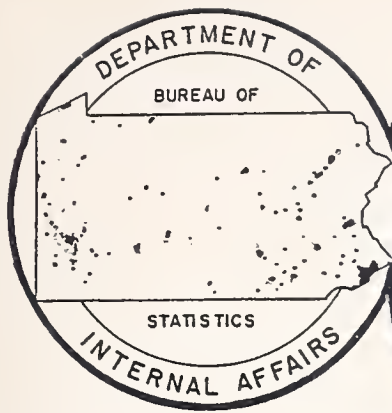
"Sticky Questions," Newsweek, Volume 62, page 34, November 25, 1963.

"Upheaval in State Capitols — How Redistricting Hits the States," Business Week, pages 94-96, August 22, 1964.

"What the Courts are Ordering States To Do," U.S. News, Volume 57, pages 40-41, August 24, 1964.







**SPECIAL RELEASE**

DEPARTMENT OF  
INTERNAL AFFAIRS  
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Frank Krizan, Graphic Analysis  
Ruth DeShang, Tabular Presentation

MAY 1961

RELEASE NO. S-9

# POPULATION AND AREA OF MUNICIPALITIES IN PENNSYLVANIA

## COUNTY MAP DIAGRAMS SHOWING MUNICIPALITIES WITH AREAS AND 1950 AND 1960 POPULATION



# POPULATION AND AREA OF MUNICIPALITIES IN PENNSYLVANIA

## CONTENTS

	<u>Page</u>		<u>Page</u>
Foreword	i	Juniata	35
How to use this release	i	Lackawanna	36
Adams	1	Lancaster	37
Allegheny	2	Lawrence	38
Armstrong	4	Lebanon	39
Beaver	5	Lehigh	40
Bedford	6	Luzerne	41
Berks	7	Lycoming	42
Blair	8	McKean	43
Bradford	9	Mercer	44
Bucks	10	Mifflin	45
Butler	11	Monroe	46
Cambria	12	Montgomery	47
Cameron	13	Montour	48
Carbon	14	Northampton	49
Centre	15	Northumberland	50
Chester	16	Perry	51
Clarion	17	Philadelphia	52
Clearfield	18	Pike	53
Clinton	19	Potter	54
Columbia	20	Schuylkill	55
Crawford	21	Snyder	56
Cumberland	22	Somerset	57
Dauphin	23	Sullivan	58
Delaware	24	Susquehanna	59
Elk	25	Tioga	60
Erie	26	Union	61
Fayette	27	Venango	62
Forest	28	Warren	63
Franklin	29	Washington	64
Fulton	30	Wayne	65
Greene	31	Westmoreland	66
Huntingdon	32	Wyoming	67
Indiana	33	York	68
Jefferson	34		
Appendix A - Supplementing Area Figures . . . . .			69
Appendix B - Population by Ward for Pittsburgh, Erie, Scranton, and Philadelphia . . . . .			70



FOREWORD

There is a great need in Pennsylvania for up-to-date and integrated statistics for local areas. Such statistics are needed for evaluating community characteristics and programs, for planning and promotion, and to give the public a better comprehension of the area in which they live.

A part of the need for data has been filled by the Pennsylvania Statistical Abstract. In addition, we plan to publish a series of special releases, of which this is the first, supplementing the statistics and information in the Abstract.

Your comments on this publication and your ideas for future releases will be welcomed.



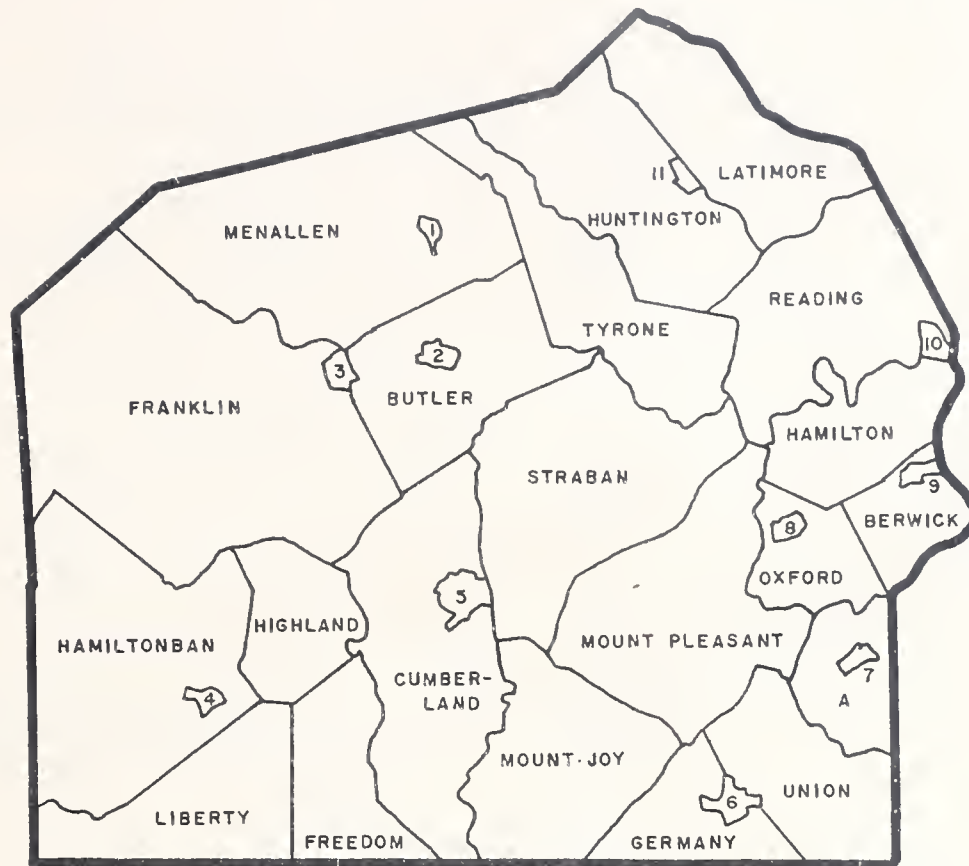
Genevieve Blatt  
Secretary of Internal Affairs

HOW TO USE THIS RELEASE

In 1942 a special publication entitled Areas of the United States, 1940 prepared under the supervision of Clarence E. Batschelet was published as a part of the Sixteenth Census of the United States. This publication has long since been out of print, and the statistics have become obsolescent because of new incorporations and annexations. In this release we have reviewed the area figures and footnoted the changes since 1940. A list of 131 municipalities which have annexed area since 1950 is given on page 39 of Release PC(1) 40A, Pennsylvania, Number of Inhabitants from the United States Census of Population: 1960. In 1960 there were 44,394 persons living in these annexed areas. In Appendix A we have presented the most recent area figures we have been able to collect.

In order to distinguish between cities, boroughs, and townships we have printed the names of townships on the county maps. Boroughs are identified by Arabic numerals and the names are presented in the population table. Cities are denoted by Roman numerals which are keyed into the population table. Municipalities are listed alphabetically in the table. In order to simplify the location of a borough or city on the map diagram we have numbered them counterclockwise. Population statistics by ward for the Cities of Philadelphia, Pittsburgh, Erie, and Scranton are presented in Appendix B.

# ADAMS COUNTY



## KEY

Boroughs are identified by Arabic numbers.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.

## POPULATION AND AREA FOR MUNICIPALITIES IN ADAMS COUNTY

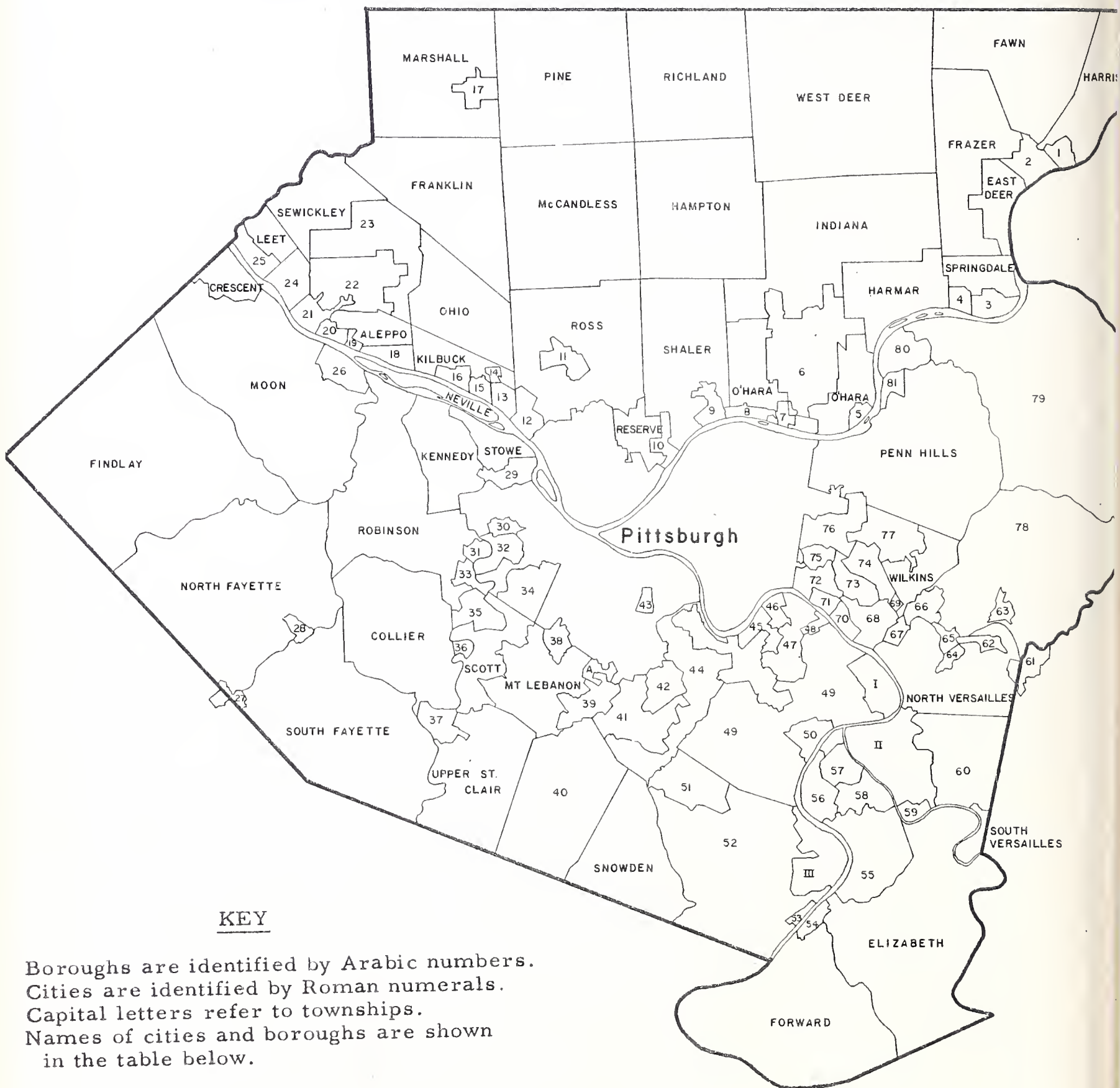
No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Adams County, total	44,197	51,906	526.0					
9	Abbottstown	538	561	(a)		Highland	409	546	11.9
3	Arendtsville	409	588	(c)		Huntington	1,348	1,491	(f)
1	Bendersville	409	484	(g)		Latimore	910	1,092	21.4
	Berwick	870	1,102	(a)		Liberty	608	724	21.0
2	Biglerville	870	923	(b)	6	Littlestown	2,635	2,756	1.0
	Butler	1,295	1,504	(b)	7	McSherrystown	2,510	2,839	0.4
A	Conewago	2,429	3,004	10.5		Menallen	1,514	1,827	(g)
	Cumberland	1,999	2,925	34.3		Mount Joy	1,143	1,380	26.3
10	East Berlin	913	1,037	(d)		Mount Pleasant	1,867	2,531	31.1
4	Fairfield	451	519	(e)	8	New Oxford	1,366	1,407	0.5
	Franklin	2,334	2,483	(c)		Oxford	1,193	1,581	9.8
	Freedom	464	470	14.1		Reading	1,138	1,352	26.2
	Germany	954	1,151	11.1		Straban	1,941	2,387	34.8
5	Gettysburg	7,046	7,960	1.3		Tyrone	1,037	1,186	21.8
	Hamilton	603	763	(d)		Union	908	1,170	17.5
	Hamiltonban	1,673	1,779	(e)	11	York Springs	413	384	(f)

(1) As explained in the key on the map diagrams, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(a) The combined area for Berwick township and Abbottstown borough was 8.4 square miles. (b) The combined area for Butler township and Biglerville borough was 24.4 square miles. (c) The combined area for Franklin township and Arendtsville borough was 71.1 square miles. (d) The combined area for Hamilton township and East Berlin borough was 14.2 square miles. (e) The combined area for Hamilton township and Fairfield borough was 40.6 square miles. (f) The combined area for Huntington township and York Springs borough was 26.4 square miles. (g) The combined area for Menallen township and Bendersville borough was 45.9 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 232.

# ALLEGHENY COUNTY





## POPULATION AND AREA FOR MUNICIPALITIES IN ALLEGHENY COUNTY

3

(For a breakdown of areas subdivided since 1940, see Appendix A.)

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
Allegheny County, (3) total		1,515,237	1,628,587	730.0					
7	Aleppo	560	755	(a)	II	McKeesport	53,033	45,489	5.2
13	Aspinwall	4,084	3,727	0.4	29	McKees Rocks	16,241	13,185	1.0
44	Avalon	6,463	6,859	0.6		Marshall	1,745	2,528	(g)
A	Baldwin	-	24,489	(b)	10	Millvale	7,287	6,624	0.7
	Baldwin	10,743	3,004	(b)	78	Monroeville	7,841	22,446	19.5
12	Bellevue	11,604	11,412	1.0		Moon	7,096	10,642	23.8
15	Ben Avon	2,465	2,553	0.4		Mount Lebanon	26,604	35,361	5.9
14	Ben Avon Heights	394	431	(e)	43	Mount Oliver	6,646	5,980	0.3
40	Bethel Park	11,324	23,650	11.9	47	Munhall	16,437	17,312	2.4
5	Blawnox	2,165	2,085	0.4		Neville	2,310	2,400	1.6
1	Brackenridge	6,178	5,697	0.5	68	North Braddock	14,724	13,204	1.6
70	Braddock	16,488	12,337	(c)		North Fayette	4,004	4,583	24.9
73	Braddock Hills	1,965	2,414	(c)		North Versailles	9,821	13,583	8.4
17	Bradford Woods	458	866	(g)	28	Oakdale	1,572	1,695	0.5
42	Brntwood	12,535	13,706	1.4	80	Oakmont	7,264	7,504	1.6
37	Bridgeville	5,650	7,112	1.1		O'Hara	5,768	8,681	7.0
35	Carnegie	12,105	11,887	1.3		Ohio	996	1,784	7.5
39	Castle Shannon	5,459	11,836	1.5	20	Osborne	496	609	(a)
69	Chalfant	1,381	1,414	0.2		Penn Hills	25,280	51,512	19.1
4	Cheswick	1,534	2,734	0.5		Pine	1,732	3,613	17.1
77	Churchill	1,733	3,428	(1)	63	Pitcairn	5,857	5,383	0.5
III	Clairton City	19,652	18,389	3.0		Pittsburgh	676,806	604,332	55.4
	Collier	8,039	8,021	12.8	51	Pleasant Hills	3,808	8,573	(m)
26	Coraopolis	10,498	9,643	1.4	79	Plum	7,200	10,241	28.9
32	Crafton	8,066	8,418	1.1	57	Port Vue	4,756	6,635	1.1
	Crescent	1,867	2,603	2.2	71	Rankin	6,941	5,164	0.4
38	Dormont	13,405	13,098	0.8		Reserve	3,533	4,230	2.0
50	Dravosburg	3,786	3,458	1.0		Richland	3,527	6,453	14.7
I	Duquesne City	17,620	15,019	1.9		Robinson	4,769	7,935	(h)
	East Deer	3,185	2,865	2.2		Ross	15,744	25,952	13.8
64	East McKeesport	3,171	3,470	0.4	33	Rosslyn Farms	448	555	(h)
67	East Pittsburgh	5,259	4,122	0.4		Scott	8,686	19,094	3.8
75	Edgewood	5,292	5,124	0.5	21	Sewickley	5,836	6,157	1.0
24	Edgeworth	1,466	2,030	1.5		Sewickley	2,365	1,283	5.4
54	Elizabeth	2,615	2,597	(d)	22	Sewickley Heights	679	931	(i)
	Elizabeth	9,978	14,159	(d)	23	Sewickley Hills	417	326	(i)
16	Emsworth	3,128	3,341	0.6		Shaler	16,430	24,939	10.7
9	Etna	6,750	5,519	0.8	8	Sharpsburg	7,296	6,096	0.5
	Fawn	2,350	3,008	13.2		Snowden	4,540	7,384	8.9
	Findlay	3,638	4,537	32.4		South Fayette	9,979	9,494	20.1
74	Forest Hills	6,301	8,796	1.5		South Versailles	370	517	0.9
	Forward	4,292	4,692	19.3	3	Springdale	4,939	5,602	(j)
6	Fox Chapel	1,721	3,302	8.4		Springdale	1,707	1,957	(j)
	Franklin	2,314	3,935	13.6		Stowe	12,210	11,730	2.2
	Frazer	1,319	1,707	10.2	72	Swissvale	16,488	15,089	1.2
56	Glassport	8,707	8,418	1.6	2	Tarentum	9,540	8,232	1.1
18	Glenfield	870	741	(a)	31	Thornburg	335	391	(h)
34	Green Tree	2,818	5,226	2.0	61	Trafford	154	140	(k)
	Hampton	6,104	10,641	16.1	66	Turtle Creek	12,363	10,607	1.0
	Harmar	3,454	3,657	5.9		Upper St. Clair	3,629	8,287	10.0
	Harrison	15,116	15,710	7.2	81	Verona	4,325	4,032	0.5
19	Haysville	177	143	(a)	59	Versailles	2,484	2,297	0.5
36	Heidelberg	2,250	2,118	0.3	62	Wall	1,850	1,493	0.5
46	Homestead	10,046	7,502	0.6		West Deer	7,484	9,038	28.7
	Indiana	4,196	5,751	17.0	53	West Elizabeth	1,137	921	0.3
30	Ingram	4,236	4,730	0.5	45	West Homestead	3,257	4,155	0.8
52	Jefferson	5,534	8,280	(m)	49	West Mifflin	17,985	27,289	14.4
	Kennedy	3,142	5,806	5.3	11	West View	7,581	8,079	1.0
	Kilbuck	1,520	1,930	(e)	48	Whitaker	2,149	2,130	0.3
	Leet	1,905	1,239	1.5	41	Whitehall	7,342	16,075	(b)
25	Leetsdale	2,411	2,153	1.0	60	White Oak	6,159	9,047	6.6
58	Liberty	1,900	3,624	1.5		Wilkins	4,261	8,272	(1)
55	Lincoln	1,467	1,686	5.0	76	Wilkinsburg	31,418	30,066	2.1
	McCandless	6,488	14,582	17.4	65	Wilmerding	5,325	4,349	0.5
27	McDonald	890	714	(f)					

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

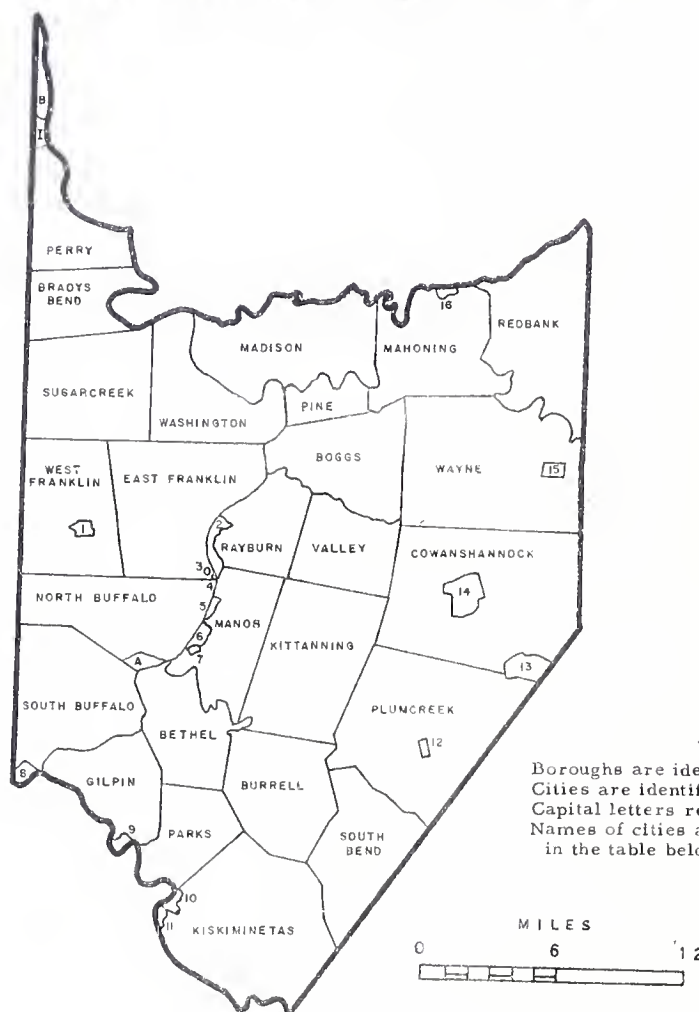
(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(3) Detail does not add to total because Patton township which had a population of 7,841 in 1950 was changed to Monroeville on January 25, 1951.

(a) The combined area for Aleppo township, Glenfield, Haysville, and Osborne boroughs was 3.2 square miles. (b) The combined area for Baldwin township, Baldwin borough and Whitehall borough is 9.6 square miles. (c) The combined area of Braddock, Braddock Hill boroughs, and Braddock township is 1.7 square miles. (d) The combined area of Elizabeth borough and Elizabeth township is 22.6 square miles. (e) The combined area for Kilbuck township and Ben Avon Heights borough is 2.6 square miles. (f) Of the total land area in McDonald borough, 0.2 square miles are located in Allegheny County and 0.3 square miles in Washington County. (g) The combined area for Marshall township and Bradford Woods borough is 15.7 square miles. (h) The combined area for Robinson township, Rosslyn Farms and Thornburg boroughs is 16.5 square miles. (i) The combined area for Sewickley Heights and for Sewickley Hills is 9.8 square miles. (j) The combined area for Springdale borough and Springdale township is 3.3 square miles. (k) Of the total land area in Trafford borough, 0.2 square miles are situated in Allegheny County and 0.8 square miles in Westmoreland County. (l) The combined area for Wilkins township and Churchill borough is 5.1 square miles. (m) The combined area for Pleasant Hills borough and Jefferson township is 19.4 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 232. Area figures for Allegheny County were supplied by the Pittsburgh Regional Planning Association.

# ARMSTRONG COUNTY



## KEY

Boroughs are identified by Arabic numbers.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.

## POPULATION AND AREA FOR MUNICIPALITIES IN ARMSTRONG COUNTY

(For a breakdown of areas subdivided since 1940, see Appendix A.)

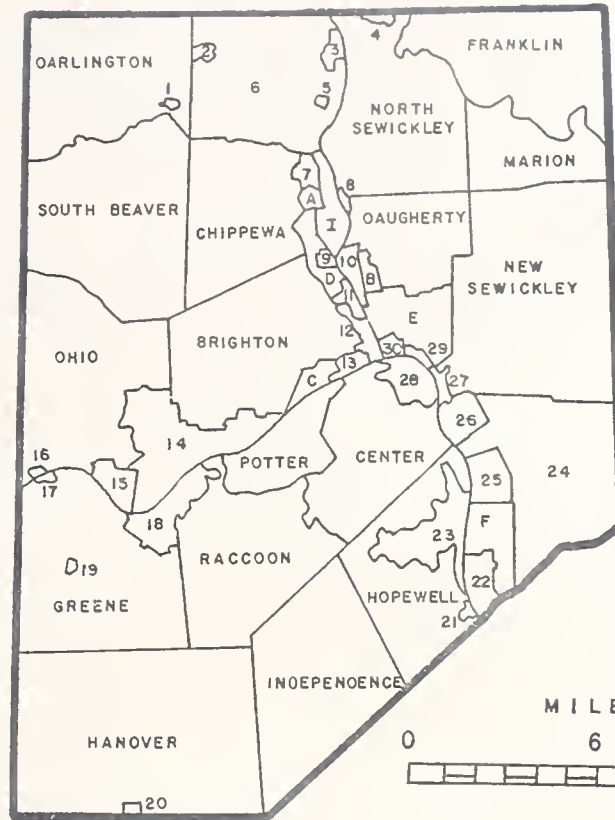
No. (1)		Name (1)		Population		Land area (2) (square miles)	No. (1)		Name (1)		Population		Land area
				1950	1960						1950	1960	
Armstrong County, total				80,842	79,524	659.7							
11	Apollo	3,015	2,694	0.3						Manor	4,798	5,013	(e)
4	Applewold	500	489	(b)		5	Manorville	662	557	(e)			
13	Atwood	110	131	(a)		10	North Apollo	1,502	1,741	0.6			
	Bethel	1,214	1,300	15.6			North Buffalo	1,633	2,365	25.8			
	Boggs	905	915	24.2		1	Parker City	979	945	(c)			
	Bradys Bend	1,505	1,216	12.9			Parks	2,893	3,032	14.0			
	Burrell	734	709	21.7			Perry	437	356	14.7			
A	Cadogan	727	562	0.6			Pine	918	797	4.9			
	Cowanshannock	4,686	3,471	(a)			Plumcreek	1,446	1,468	(f)			
15	Dayton	828	769	(g)			Rayburn	2,164	2,179	12.2			
	East Franklin	3,505	4,087	(b)			Redbank	1,513	1,249	33.0			
12	Elderton	336	387	(f)		14	Rural Valley	857	860	(a)			
6	Ford City	5,352	5,440	0.5			South Bend	938	916	22.5			
7	Ford Cliff	597	590	(e)		16	South Bethlehem	489	510	(d)			
8	Freeport	2,685	2,439	0.5			South Buffalo	2,261	2,650	28.1			
	Gilpin	3,061	3,229	16.6			Sugarcreek	867	1,040	26.9			
B	Hovey	149	131	(c)			Valley	455	502	14.8			
	Kiskiminetas	4,240	4,577	41.4			Washington	1,024	1,049	21.6			
2	Kittanning	7,731	6,793	0.8			Wayne	1,008	901	(g)			
	Kittanning	1,384	1,673	31.4			West Franklin	1,451	1,458	(h)			
9	Leechburg	4,042	3,545	0.5		3	West Kittanning	910	1,101	0.1			
	Madison	1,479	1,171	30.8		1	Worthington	800	772	(h)			
	Mahoning	2,052	1,745	(d)									

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(a) The combined area for Cowanshannock township and Atwood and Rural Valley boroughs was 49.9 square miles. (b) The combined area for East Franklin township and Applewold borough was 32.0 square miles. (c) The combined area for Hovey township and Parker City was 2.8 square miles. (d) The combined area for Mahoning township and South Bethlehem borough was 17.2 square miles. (e) The combined area for Manor township and Ford Cliff and Manorville boroughs was 43.0 square miles. (f) The combined area for Plumcreek township and Elderton borough was 43.0 square miles. (g) The combined area for Wayne township and Dayton borough was 45.6 square miles. (h) The combined area for West Franklin township and Worthington borough was 26.6 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 232.

# BEAVER COUNTY



## KEY

Boroughs are identified by Arabic numerals.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown in the table below.

POPULATION AND AREA FOR MUNICIPALITIES IN BEAVER COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Beaver County, total	175,192	206,948	440.6					
23	Aliquippa	26,132	26,369	4.4	F	Harmony	4,501	5,106	3.1
22	Ambridge	16,429	13,865	1.4	5	Homewood	316	305	(a)
25	Baden	3,732	6,109	2.1	19	Hookstown	247	295	(e)
13	Beaver	6,360	6,160	0.9		Hopewell	6,644	13,359	(g)
I	Beaver Falls	17,375	16,240	2.1		Independence	788	1,256	23.4
6	Big Beaver	1,787	2,381	(a)	14	Industry	1,788	2,338	8.5
C	Borough	2,750	2,917	1.1	3	Koppel	1,137	1,389	0.4
12	Bridgewater	1,316	1,292	0.4		Marion	582	773	10.8
	Brighton	2,474	6,260	21.3	15	Midland	6,491	6,425	1.7
	Center	3,995	7,113	15.4	28	Monaca	7,415	8,394	2.0
	Chippewa	2,987	6,051	16.5	10	New Brighton	9,535	8,397	1.0
26	Conway	1,570	1,926	1.3	2	New Galilee	507	593	(a)
	Darlington	354	306	(b)		New Sewickley	3,193	4,831	32.9
1	Darlington	1,444	1,810	(b)		North Sewickley	3,555	5,379	21.2
	Daugherty	1,468	3,118	(c)		Ohio	1,412	3,050	(h)
29	East Rochester	985	1,025	(j)	D	Patterson	2,224	2,930	(i)
8	Eastvale	533	513	(c)	9	Patterson Heights	678	816	(i)
24	Economy	-	5,925	18.1		Potter	1,341	555	7.2
4	Ellwood City	1,301	1,103	(d)	B	Pulaski	2,128	2,278	0.7
11	Fallston	511	410	(i)		Racoon	1,163	1,999	19.3
20	Frankfort Springs	149	180	(f)	30	Rochester	7,197	5,952	0.5
	Franklin	2,454	3,094	17.9	E	Rochester	2,820	3,863	(j)
27	Freedom	3,000	2,895	0.7	18	Shippingport	408	383	(e)
17	Georgetown	246	246	(e)		South Beaver	1,031	1,725	29.3
16	Glasgow	214	142	(h)	21	South Heights	691	740	(g)
	Greene	854	1,165	(e)	7	West Mayfield	1,768	2,201	(k)
	Hanover	1,015	1,564	(f)	A	White	1,292	1,437	(k)

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

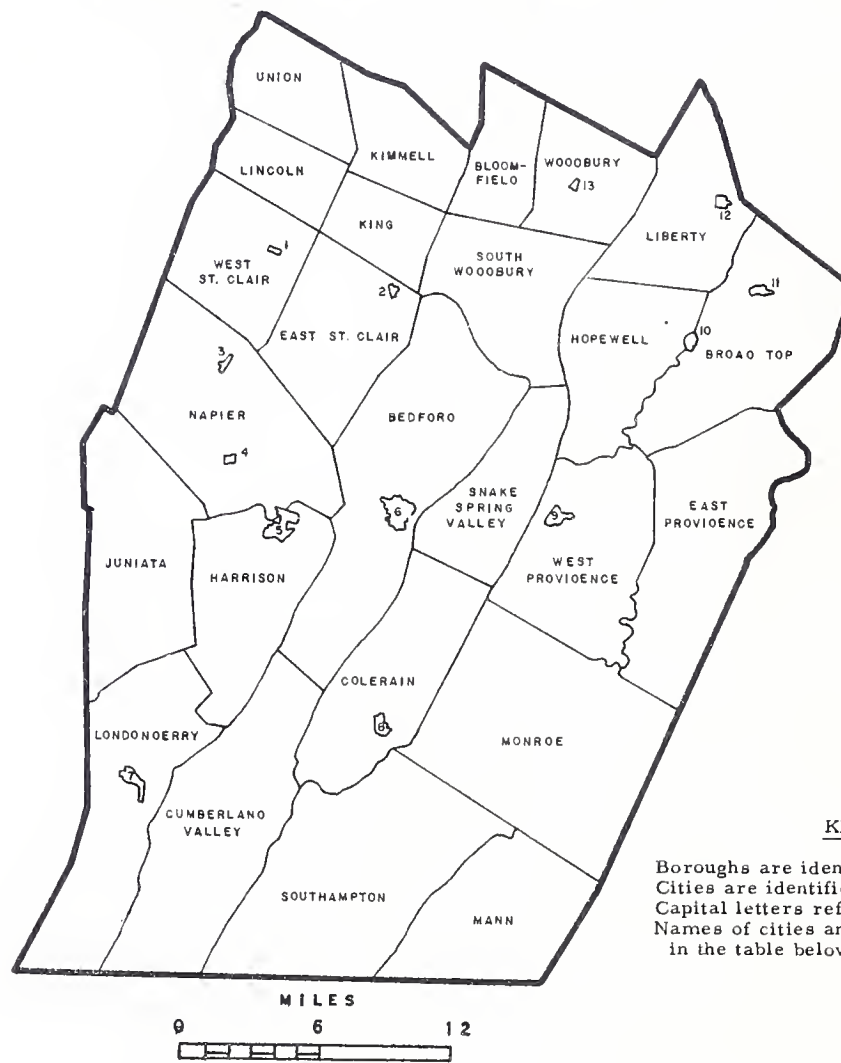
(3) Detail does not add to total because Economy township which had a population of 2,905 in 1950 was changed to Economy borough on May 3, 1957.

(a) The combined area for Big Beaver township and Homewood and New Galilee boroughs was 19.0 square miles. (b) The combined area for Darlington township and Darlington borough was 22.1 square miles. (c) The combined area of Daugherty township and Eastvale borough was 10.3 square miles. (d) Of the total land area in Ellwood City borough, 0.2 square miles are located in Beaver County and 1.9 square miles in Lawrence County. (e) The combined area of Greene township and Georgetown, Hookstown, and Shippingport boroughs was 30.3 square miles. (f) The combined area of Hanover township and Frankfort Springs borough was 45.3 square miles. (g) The combined area of Hopewell township and South Heights borough was 17.1 square miles. (h) The combined area of Ohio township and Glasgow borough was 23.2 square miles. (i) The combined area of Patterson township and Fallston and Patterson Heights boroughs was 2.2 square miles. (j) The combined area of Rochester township and East Rochester borough was 4.1 square miles. (k) The combined area of West Mayfield borough and White township was 1.2 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 232.



# BEDFORD COUNTY



## KEY

Boroughs are identified by Arabic numerals.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.

POPULATION AND AREA FOR MUNICIPALITIES IN BEDFORD COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Bedford County, total	40,775	42,451	1,018.3					
6	Bedford	3,521	3,696	0.8		Londonderry	1,546	1,613	55.2
	Bedford	2,785	3,977	68.8		Mann	505	427	36.2
	Bloomfield	499	503	18.9	5	Manns Choice	313	351	(d)
	Broad Top	3,012	2,350	(a)		Monroe	1,209	1,125	88.0
11	Coaldale	231	187	(a)		Napier	1,566	1,577	(e)
	Colerain	783	793	(b)	3	New Paris	202	232	(e)
	Cumberland Valley	1,438	1,388	58.9	1	Pleasantville	242	300	(f)
	East Providence	1,251	1,274	50.2	8	Rainsburg	189	209	(b)
	East St. Clair	1,323	1,664	(c)	2	St. Clairsville	127	115	(c)
9	Everett	2,297	2,279	0.6	12	Saxton	1,093	977	0.3
	Harrison	694	798	(d)	4	Schellsburg	305	288	(e)
10	Hopewell	360	301	34.0		Snake Spring Valley	891	1,071	26.6
	Hopewell	1,402	1,476	(a)		Southampton	842	703	79.0
7	Hyndman	1,322	1,124	0.5		South Woodbury	1,538	1,587	34.4
	Juniata	831	765	47.0		Union	274	321	22.9
	Kimmell	1,109	1,151	20.8		West Providence	2,320	3,021	39.4
	King	943	938	16.0		West St. Clair	890	1,101	(f)
	Liberty	1,581	1,417	27.9	13	Woodbury	254	280	(g)
	Lincoln	320	318	16.2		Woodbury	767	754	(g)

- (1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Broad Top township and Coaldale and Hopewell boroughs was 48.6 square miles. (b) The combined area for Colerain township and Rainsburg borough was 42.9 square miles. (c) The combined area for East St. Clair township and St. Clairsville borough was 34.6 square miles. (d) The combined area for Harrison township and Manns Choice borough was 37.0 square miles. (e) The combined area for Napier township and New Paris and Schellsburg boroughs was 57.8 square miles. (f) The combined area for West St. Clair township and Pleasantville borough was 30.1 square miles. (g) The combined area for Woodbury township and Woodbury borough was 24.7 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports PC(A1)-40, 1960 Census of Population, Table 2, PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, pp. 232 and 233.



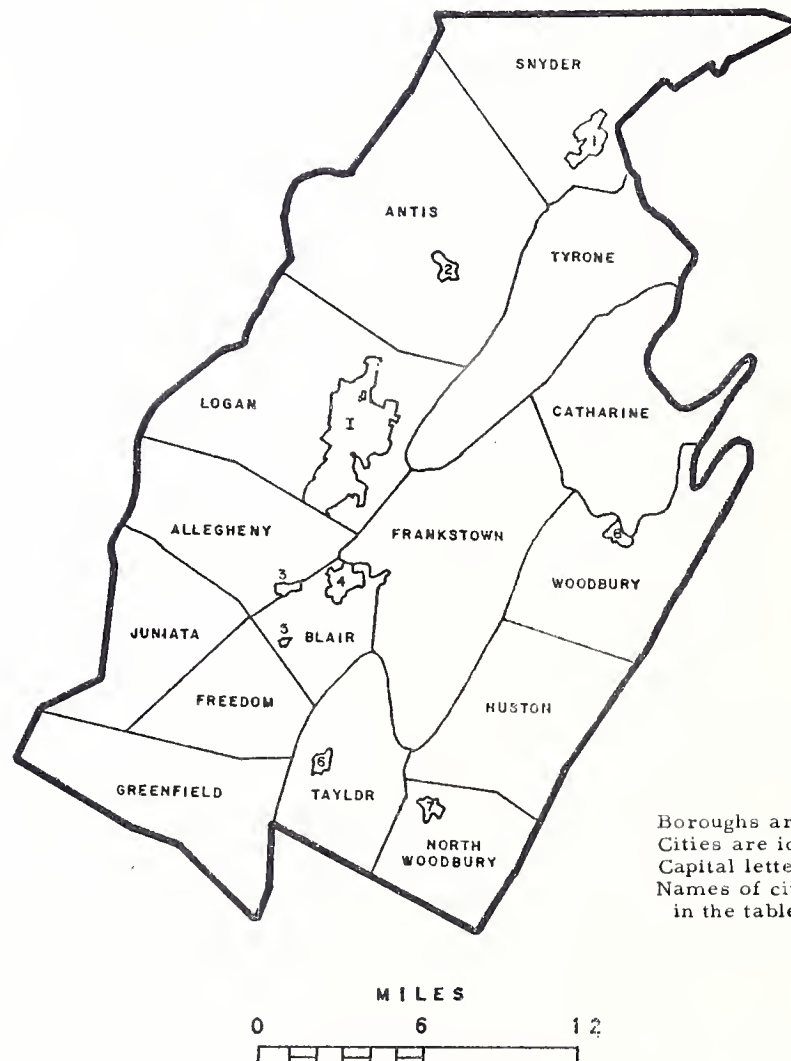
N.A. Not available.

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Bern township and Leesport borough was 20.3 square miles. (b) The combined area for Centre township and Centreport borough was 22.1 square miles. (c) The combined area for Exeter township and St. Lawrence borough was 26.1 square miles. (d) The combined area for Greenwich township and Lenhartsville borough was 31.3 square miles. (e) The combined area for Maxatawny township and Lyons borough was 27.6 square miles. (f) The combined area for Penn township and Bernville borough was 18.7 square miles. (g) The combined area for Spring township and Wyomissing Hills borough was 20.4 square miles. (h) The combined area for Upper Tulpehocken township and Strausstown borough was 23.1 square miles. (i) The combined area for Washington township and Bally and Bechtelsville boroughs was 15.1 square miles.

# BLAIR COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN BLAIR COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Blair County, total	139,514	137,270	529.9					
1	Allegheny	3,836	5,056	29.3		Juniata	610	742	25.4
	Altoona	77,177	69,407	9.0		Logan	9,060	10,123	49.3
	Antis	3,561	3,943	60.4	7	Martinsburg	1,562	1,772	0.2
2	Bellwood	2,559	2,330	0.4	5	Newry	412	432	(a)
	Blair	2,105	2,478	(a)		North Woodbury	1,327	1,311	21.5
	Catharine	811	778	30.1	6	Roaring Spring	2,771	2,937	0.5
3	Duncansville	1,391	1,396	0.3		Snyder	3,015	3,329	46.4
	Frankstown	2,805	3,904	49.0	1	Taylor	1,677	1,928	23.6
	Freedom	1,644	2,127	17.1		Tyrone	8,214	7,792	1.3 (b)
	Greenfield	3,414	3,702	37.9		Tyrone	982	1,253	42.4 (b)
4	Hollidaysburg	6,483	6,475	0.8	8	Williamsburg	1,792	1,792	0.3
	Huston	927	944	35.6		Woodbury	1,379	1,319	33.9

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

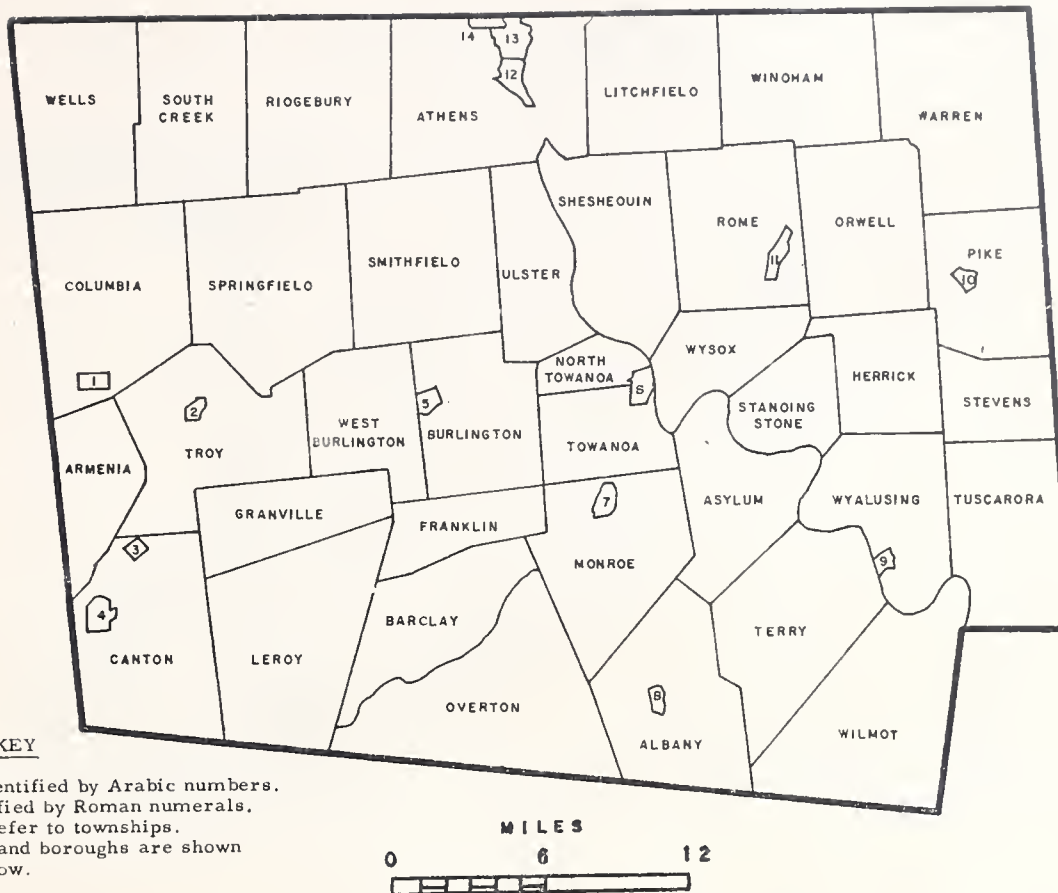
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Blair township and Newry borough was 15.2 square miles. (b) The borough of Tyrone has an area of 1.3 square miles whereas Tyrone township covers 42.4 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 233.



# BRADFORD COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN BRADFORD COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Bradford County, total	51,722	54,925	1,146.4					
3	Alba	190	192	(c)	11	Rome	257	274	(g)
	Albany	709	662	(a)		Rome	539	546	(g)
	Armenia	87	66	18.0	13	Sayre	7,735	7,917	1.9
	Asylum	604	762	26.5		Sheshequin	949	969	34.4
12	Athens	4,430	4,515	1.6		Smithfield	1,137	1,306	41.4
	Athens	2,268	2,882	43.0		South Creek	802	993	28.3
	Barclay	3	4	19.4	14	South Waverly	1,298	1,382	0.9
5	Burlington	148	115	(b)		Springfield	845	994	41.3
	Burlington	530	543	(b)		Standing Stone	469	445	15.8
4	Canton	2,118	2,102	1.2		Stevens	355	307	15.1
	Canton	1,389	1,482	(c)	1	Sylvania	211	243	(d)
	Columbia	875	914	(d)		Terry	704	700	32.9
	Franklin	350	347	13.8	6	Towanda	4,069	4,293	1.3
	Granville	752	704	24.8		Towanda	964	1,006	15.5
	Herrick	467	437	22.7	2	Troy	1,371	1,478	0.7
10	Leraysville	310	371	(f)		Troy	1,334	1,393	35.7
	Leroy	591	557	43.0		Tuscarora	770	680	29.5
	Litchfield	713	786	30.3		Ulster	911	1,099	18.7
7	Monroe	466	502	(e)		Warren	650	692	43.3
	Monroe	936	903	(e)		Wells	615	762	33.5
8	New Albany	365	359	(a)		West Burlington	547	526	24.2
	North Towanda	598	664	8.5		Wilmot	853	809	44.0
	Orwell	716	691	33.1		Windham	529	565	32.4
	Overton	210	154	46.2	9	Wyalusing	612	685	(h)
	Pike	502	434	(f)		Wyalusing	890	930	(h)
	Ridgebury	837	1,346	38.7		Wysox	1,142	1,437	22.4

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
 (2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area of Albany township and New Albany borough was 32.5 square miles. (b) The combined area of Burlington township and Burlington borough was 25.8 square miles. (c) The combined area of Canton township and Alba borough was 37.5 square miles. (d) The combined area of Columbia township and Sylvania borough was 41.6 square miles. (e) The combined area of Monroe township and Monroe borough was 36.9 square miles. (f) The combined area of Pike township and Leraysville borough was 29.5 square miles. (g) The combined area for Rome township and Rome borough was 30.4 square miles. (h) The combined area for Wyalusing township and Wyalusing borough was 28.2 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 233.

# BUCKS COUNTY



## POPULATION AND AREA FOR MUNICIPALITIES IN BUCKS COUNTY

(For a breakdown of areas subdivided since 1940, see Appendix A.)

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Bucks County, total	144,620	308,567	617.2					
A	Bedminster	2,268	2,740	(a)	21	Newtown	2,095	2,323	0.4
	Bensalem	11,365	23,478	20.1		Newtown	1,013	1,468	12.1
	Bridgeton	944	948	6.5		Nockamixon	1,305	1,785	22.0
	Bristol	12,710	12,364	1.3		Northampton	2,248	6,006	26.4
	Bristol	12,184	59,298	16.8	15	Penndel	1,100	2,158	(e)
9	Buckingham	3,007	4,018	32.4	5	Perkasie	4,358	4,650	2.5
	Chalfont	828	1,410	(g)		Plumstead	2,353	3,354	27.3
	Doylestown	5,262	5,917	1.2	2	Quakertown	5,673	6,305	1.1
	Doylestown	2,364	3,795	16.3		Richland	3,050	3,783	(h)
	Dublin	400	517	(a)	1	Richlandtown	762	741	(h)
16	Durham	668	735	(b)	23	Riegelsville	871	953	(b)
	East Rockhill	1,626	1,990	13.0	4	Sellersville	2,373	2,497	1.1
	Falls	3,540	29,082	(c)	7	Silverdale	384	489	(d)
	Haycock	1,084	1,273	21.0		Solebury	2,208	2,972	27.4
	Hilltown	3,688	5,549	(d)		Springfield	2,668	3,085	32.6
12	Hulmeville	860	968	(e)	6	Telford	528	580	(i)
	Ivyland	358	425	(j)		Tinicum	1,552	1,746	29.9
	Langhorne	1,579	1,924	0.5	3	Trumbauersville	838	785	(f)
	Langhorne Manor	781	1,001	(e)	18	Tullytown	648	2,452	(c)
	Lower Makefield	3,211	8,604	18.2		Upper Makefield	1,410	1,991	21.3
19	Lower Southampton	3,562	12,619	6.8	3	Upper Southampton	2,027	7,941	6.4
	Middletown	4,987	26,936	(e)		Warminster	7,127	15,994	(j)
	Milford	2,865	3,524	(f)		Warrington	2,336	4,148	13.9
	Morrisville	6,787	7,790	1.3		Warwick	906	1,810	11.2
	New Britain	581	1,109	(g)		West Rockhill	2,020	2,484	17.0
10	New Britain	1,367	3,090	(g)		Wrightstown	909	1,734	10.0
	New Hope	1,066	958	1.2	20	Yardley	1,916	2,271	0.7

- (1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Bedminster township and Dublin borough was 32.3 square miles. (b) The combined area for Durham township and Riegelsville borough was 10.2 square miles. (c) The combined area for Falls township and Tullytown borough was 27.2 square miles. (d) The combined area for Hilltown township and Silverdale borough was 27.6 square miles. (e) The combined area for Middletown township and Hulmeville, Langhorne Manor, and Penndel boroughs was 20.7 square miles. (f) The combined area for Milford township and Trumbauersville borough was 28.5 square miles. (g) The combined area for New Britain township and Chalfont and New Britain boroughs was 18.6 square miles. (h) The combined area for Richland township and Richlandtown borough was 21.6 square miles. (i) Of the total land area in Telford borough, 0.1 square miles are located in Bucks County, and 0.4 square miles in Montgomery County. (j) The combined area of Warminster township and Ivyland borough was 10.5 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States, 1940, p. 233.



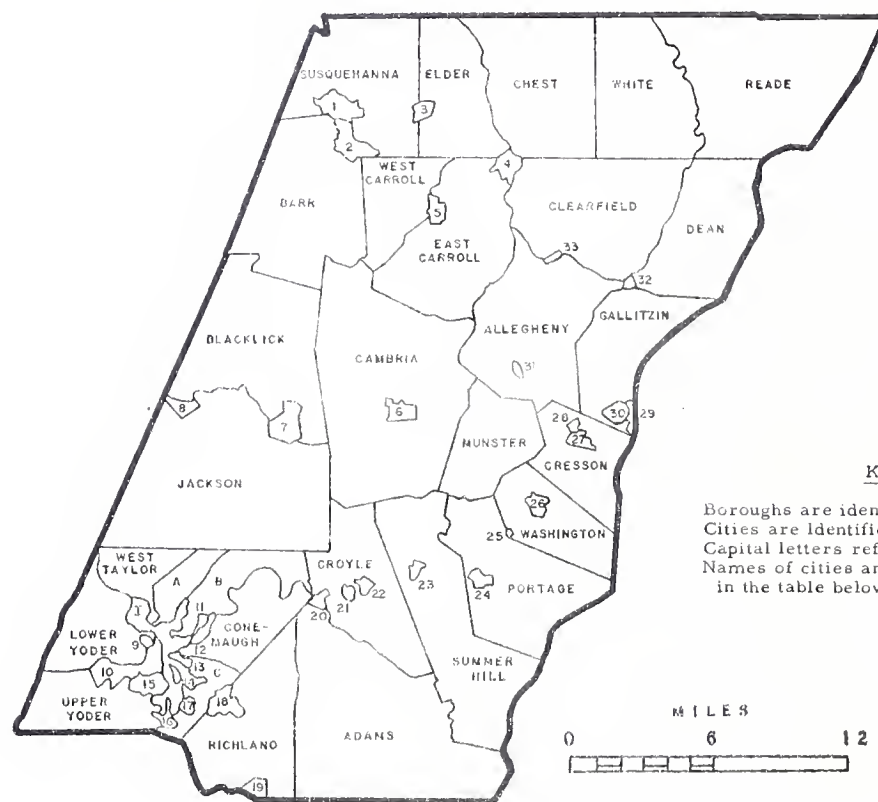
POPULATION AND AREA FOR MUNICIPALITIES IN BUTLER COUNTY

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC (P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 233.



# CAMBRIA COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN CAMBRIA COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Cambria County, total	209,541	203,283	694.5					
	Adams	6,128	5,946	47.7		Jackson	3,457	4,277	46.5
	Allegheny	1,052	1,129	(a)		Johnstown	63,232	53,949	5.6
32	Ashville	441	422	(d)	26	Lilly	1,898	1,642	0.5
1	Barnesboro	3,442	3,035	1.3	17	Lorain	1,406	1,324	0.5
	Barr	3,084	2,529	32.8	31	Loretto	863	1,338	(a)
	Blacklick	2,887	2,440	31.5		Lower Yoder	3,440	4,828	13.7
9	Brownstown	1,508	1,379	0.2		Middle Taylor	873	963	4.9
	Cambria	5,846	5,594	50.7		Munster	550	577	14.7
5	Carrolltown	1,452	1,525	0.6	7	Nanty-Glo	5,425	4,608	1.9
25	Cassandra	381	270	(h)	4	Patton	3,148	2,880	0.7
	Chest	374	289	29.8	24	Portage	4,371	3,933	0.6
33	Chest Springs	232	215	(a)		Portage	4,717	4,060	21.2
	Clearfield	1,211	1,155	29.7		Reade	2,399	2,024	38.3
	Conemaugh	2,219	2,533	11.0		Richland	4,930	9,234	23.3
	Cresson	2,569	2,659	0.6	28	Sankertown	865	828	(b)
27	Cresson	2,757	2,520	(b)	19	Scalp Level	1,756	1,445	0.7
	Croyle	3,347	2,389	(c)	20	South Fork	2,616	2,053	0.4
13	Daisytown	442	388	(f)	15	Southmont	2,278	2,857	1.0
14	Dale	3,310	2,807	0.2	2	Spangler	3,013	2,658	1.5
	Dean	703	614	(d)	C	Stonycreek	2,735	4,650	(f)
	East Carroll	1,408	1,344	25.7	22	Summerhill	849	870	(c)
11	East Conemaugh	4,101	3,334	0.4		Summerhill	3,964	3,376	(g)
B	East Taylor	3,112	3,513	9.9		Susquehanna	3,710	2,956	28.2
6	Ebensburg	4,086	4,111	0.7	29	Tunnelhill	535	463	(e)
21	Ehrenfeld	N.A.	566	(c)		Upper Yoder	3,872	5,474	11.7
	Elder	1,516	1,262	13.5	8	Vintondale	1,185	938	0.8
16	Ferndale	2,619	2,717	0.4		Washington	1,370	1,102	(h)
12	Franklin	1,833	1,352	0.3		West Carroll	2,534	2,191	8.7
30	Gallitzin	3,102	2,783	0.8	10	Westmont	4,410	6,573	2.2
	Gallitzin	1,331	1,167	(e)	A	West Taylor	1,712	1,580	6.4
18	Geistown	2,148	3,186	1.2		White	551	369	24.0
3	Hastings	1,846	1,751	0.5	23	Wilmore	390	339	(g)

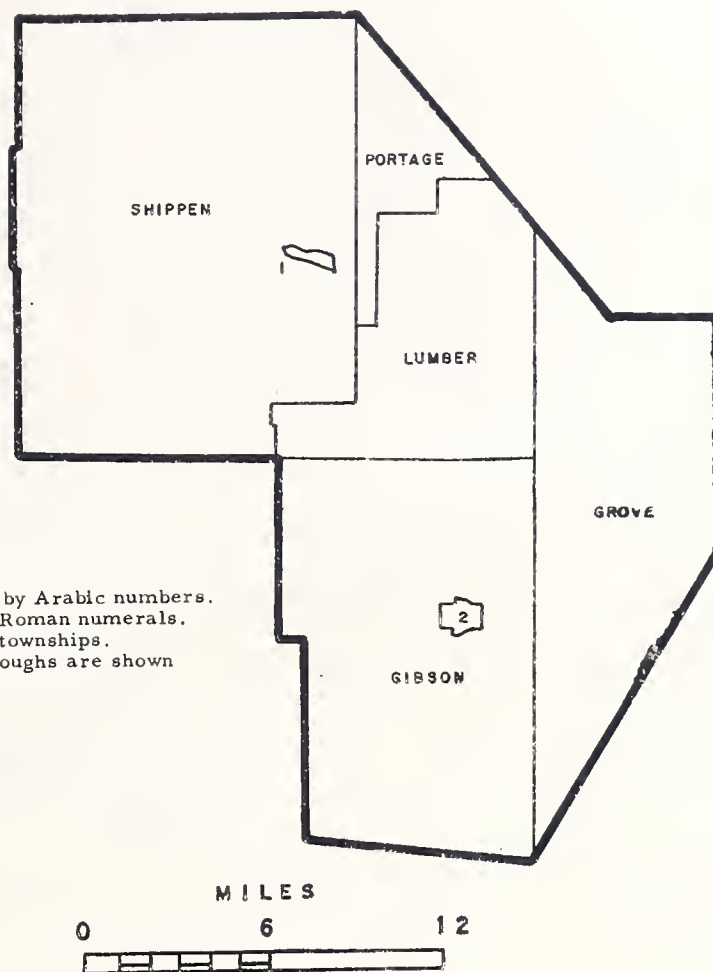
N.A. Not available.

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Allegheny township and Chest Springs and Loretto boroughs was 31.1 square miles. (b) The combined area for Cresson township and Sankertown borough was 11.3 square miles. (c) The combined area for Croyle township and Ehrenfeld and Summerhill boroughs was 20.6 square miles. (d) The combined area for Dean township and Ashville borough was 20.9 square miles. (e) The combined area for Gallitzin township and Tunnelhill borough was 16.8 square miles. (f) The combined area for Stonycreek township and Daisytown borough was 3.3 square miles. (g) The combined area for Summerhill township and Wilmore borough was 30.1 square miles. (h) The combined area for Washington township and Cassandra borough was 12.9 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States, 1940, Areas of the United States 1940, pp. 233 and 234.

## CAMERON COUNTY



## KEY

Boroughs are identified by Arabic numbers.  
 Cities are identified by Roman numerals.  
 Capital letters refer to townships.  
 Names of cities and boroughs are shown  
 in the table below.

POPULATION AND AREA FOR MUNICIPALITIES IN CAMERON COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land areas (2) (square miles)
		1950	1960				1950	1960	
	Cameron County, total	7,023	7,586	401.3					
2	Driftwood	289	203	(a)		Lumber	344	293	49.2
1	Emporium	3,646	3,397	0.7		Portage	191	251	19.4
	Gibson	305	270	(a)		Shippen	1,973	2,920	154.9
	Grove	275	252	80.1					

(1) As explained in the key in the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Gibson township and Driftwood borough was 97.0 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 234.

# CARBON COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN CARBON COUNTY

No. (1)	Name (1)	Population		Land areas (2) (square miles)	No. (1)	Name (1)	Population		Land areas (2) (square miles)
		1950	1960				1950	1960	
	Carbon County, total	57,558	52,889	405.4					
	Banks	2,413	1,871	12.3		Lower Towamensing	2,063	2,414	(c)
3	Beaver Meadows	1,723	1,392	0.3		Mahoning	2,649	2,852	25.8
10	Bowmanstown	878	888	(c)		Mauch Chunk	5,081	3,816	33.8
	East Penn	1,249	1,279	22.8		Packer	529	529	31.4
1	East Side	286	228	(b)	11	Palmerton	6,646	5,942	2.3
	Franklin	2,598	2,773	(a)	9	Parryville	598	580	(a)
6	Jim Thorpe	6,091	5,945	6.2		Penn Forest	352	283	76.9
	Kidder	377	487	(b)	5	Summit Hill	4,924	4,386	2.9
4	Lansford	7,487	5,958	1.5		Towamensing	857	996	36.9
A	Lausanne	174	144	6.1	2	Weatherly	2,622	2,591	3.3
	Lehigh	722	592	27.4	7	Weissport	674	625	(a)
8	Lehighton	6,565	6,318	1.3					

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
 (2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Franklin township and Parryville and Weissport boroughs was 16.8 square miles. (b) The combined areas for Kidder township and East Side borough was 73.9 square miles. (c) The combined area for Lower Towamensing township and Bowmanstown borough was 23.5 square miles.

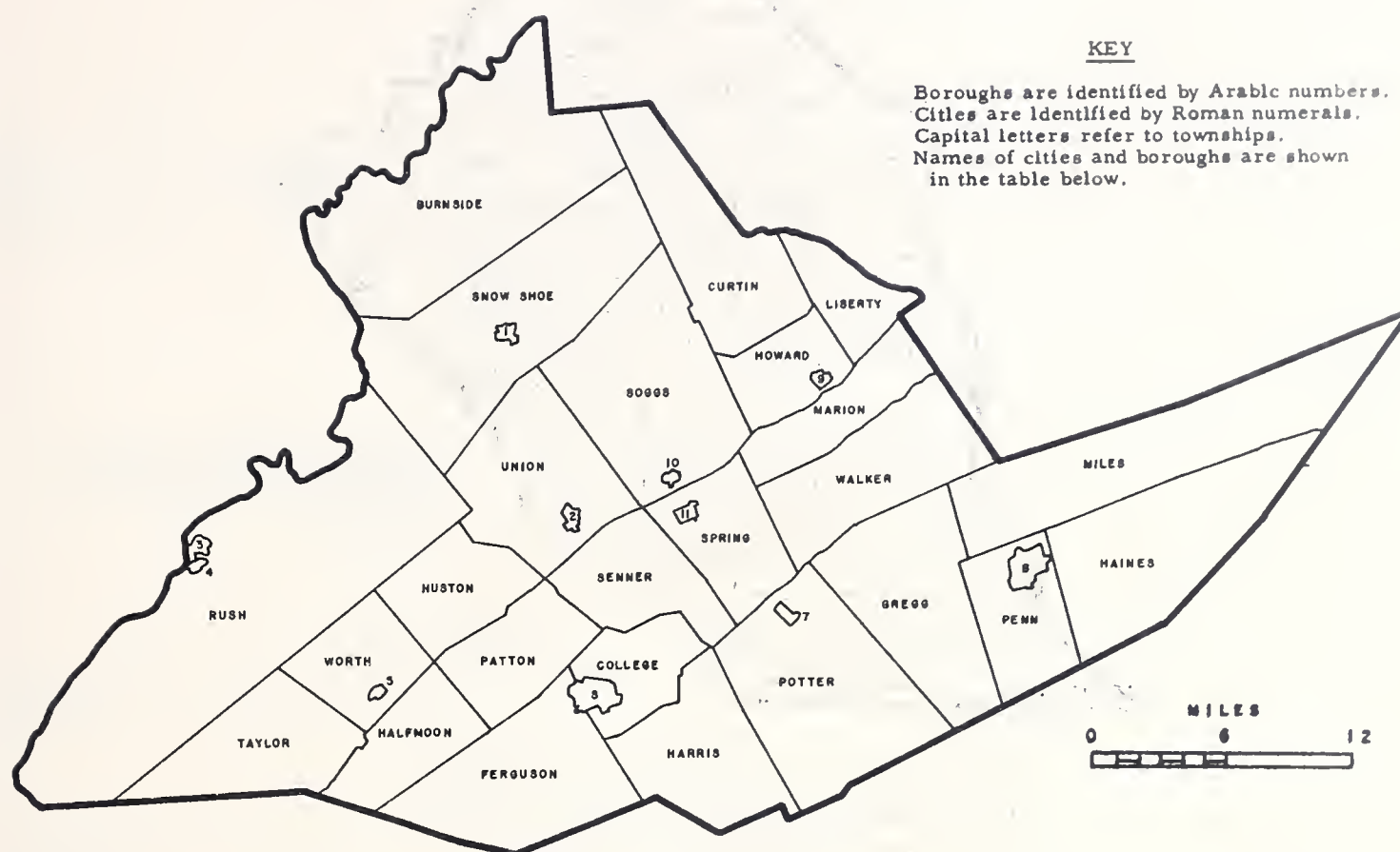
Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 234.



# CENTRE COUNTY

## KEY

Boroughs are identified by Arabic numbers.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.



POPULATION AND AREA FOR MUNICIPALITIES IN CENTRE COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Centre County, total	65,922	78,580	1,115.6					
1	Bellefonte	5,651	6,088	0.7	10	Milesburg	733	729	(a)
	Benner	1,814	2,397	28.6	8	Millheim	750	780	(c)
	Boggs	2,102	2,353	(a)		Patton	1,289	2,401	25.7
	Burnside	274	463	93.7		Penn	672	708	(c)
7	Centre Hall	834	1,109	(d)	3	Philipsburg	3,988	3,872	0.7
	College	2,275	3,957	19.9	5	Port Matilda	685	697	(h)
	Curtin	609	595	44.9		Potter	1,402	1,483	(d)
	Ferguson	2,388	3,832	48.0		Rush	3,707	3,454	(e)
	Gregg	1,475	1,434	49.3	1	Snow Shoe	670	714	(f)
	Haines	1,015	1,003	47.7		Snow Shoe	1,984	1,877	(f)
	Halfmoon	464	478	22.8	4	South Philipsburg	512	445	(e)
	Harris	1,134	2,070	31.8		Spring	4,600	5,018	27.1
9	Howard	754	770	(b)	6	State College	17,227	22,409	2.8
	Howard	684	797	(b)		Taylor	397	477	29.7
	Huston	572	661	26.0		Union	683	663	(g)
	Liberty	1,276	1,262	21.7	2	Unionville	341	371	(g)
	Marion	411	412	25.4		Walker	1,115	1,344	43.3
	Miles	1,081	1,100	57.4		Worth	354	357	(h)

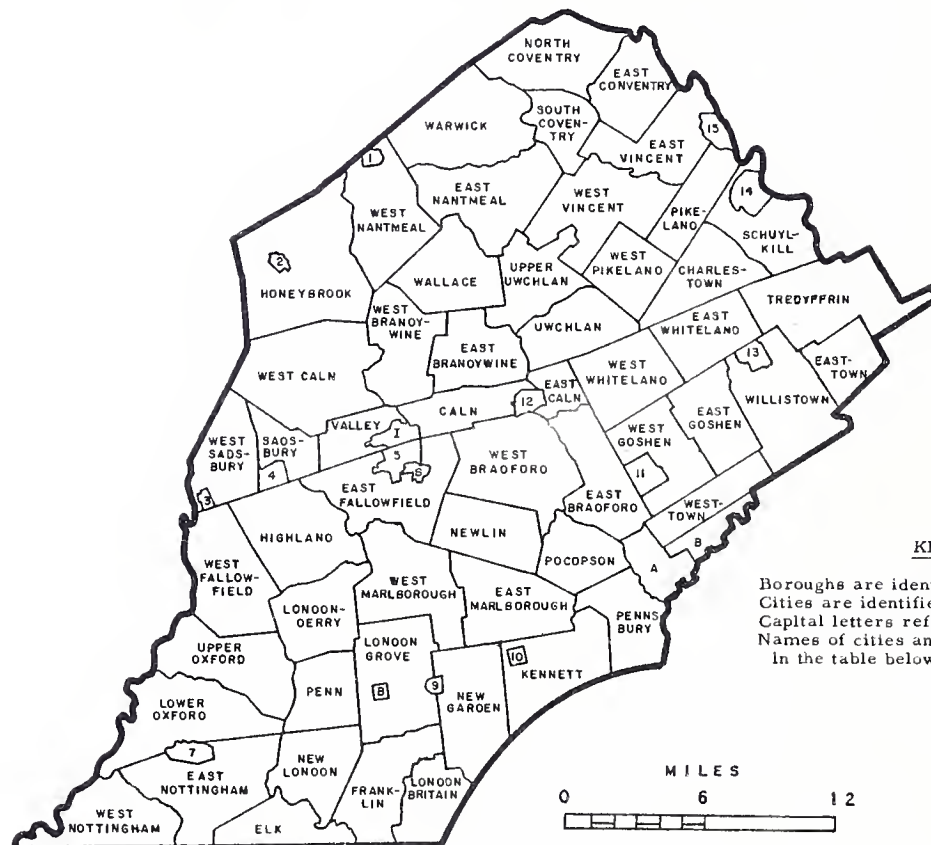
(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Boggs township and Milesburg borough was 54.3 square miles. (b) The combined area for Howard township and Howard borough was 18.3 square miles. (c) The combined area for Penn township and Millheim borough was 31.7 square miles. (d) The combined area for Potter township and Centre Hall borough was 61.0 square miles. (e) The combined area for Rush township and South Philipsburg borough was 152.8 square miles. (f) The combined area for Snow Shoe township and Snow Shoe borough was 82.3 square miles. (g) The combined area for Union township and Unionville borough was 46.2 square miles. (h) The combined area for Worth township and Port Matilda borough was 21.8 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 234.

# CHESTER COUNTY



## POPULATION AND AREA FOR MUNICIPALITIES IN CHESTER COUNTY

(For a breakdown of areas subdivided since 1940, see Appendix A.)

No. (1)	Name (1)	Population		Land areas (2) (square miles)	No. (1)	Name (1)	Population		Land areas (2) (square miles)
		1950	1960				1950	1960	
	Chester County, total	159,141	210,608	760.1					
3	Atglen	668	721	(e)	7	North Coventry	3,242	4,367	13.6
9	Avondale	941	1,016	(c)	7	Oxford	3,091	3,376	1.0
A	Birmingham	429	453	6.2	4	Parkesburg	2,611	2,759	1.0
	Caln	5,779	6,685	8.9		Penn	705	1,097	9.3
	Charlestown	854	1,931	12.6		Pennsbury	686	936	10.2
I	Coatesville	13,826	12,971	1.4	14	Phoenixville	12,932	13,797	2.3
12	Downingtown	4,948	5,598	1.4		Pocopson	475	1,315	8.4
	East Bradford	1,187	1,713	15.4		Sadsbury	1,502	2,066	6.4
	East Brandywine	1,108	1,618	11.4		Schuylkill	3,835	3,461	9.8
	East Caln	403	758	4.2	5	South Coatesville	1,996	2,032	1.8
	East Coventry	1,499	2,183	10.6		South Coventry	863	1,212	8.1
	East Fallowfield	1,795	2,745	(a)	15	Spring City	3,258	3,162	0.8
	East Goshen	1,039	1,694	10.4	B	Thornbury	297	746	4.0
	East Marlborough	1,868	2,417	15.9		Tredyffrin	7,836	16,004	20.0
	East Nantmeal	665	730	16.2		Upper Oxford	903	997	17.0
	East Nottingham	1,748	2,298	20.8		Upper Uwchlan	761	909	11.6
	East Pikeland	1,395	2,817	8.7		Uwchlan	761	995	10.5
	Easttown	3,811	6,907	8.2		Valley	3,148	3,101	6.4
	East Vincent	4,576	5,453	13.5		Wallace	771	1,065	12.2
	East Whiteland	1,740	5,078	11.1		Warwick	1,144	1,436	18.8
	Elk	462	539	10.1		West Bradford	1,530	1,894	18.7
1	Elverson	370	472	(d)		West Brandywine	1,122	1,675	13.1
	Franklin	666	817	13.4		West Caln	1,485	2,140	22.1
	Highland	904	1,029	17.7	11	West Chester	15,168	15,705	1.7
2	Honey Brook	864	1,023	(b)		West Fallowfield	1,069	1,425	18.3
	Honeybrook	1,261	1,584	(b)		West Goshen	3,542	8,214	12.2
	Kennett	2,145	3,026	15.8	8	West Grove	1,521	1,607	0.6
10	Kennett Square	3,699	4,355	1.0		West Marlborough	786	901	15.9
	London Britain	559	686	9.9		West Nantmeal	806	968	(d)
	Londonderry	595	718	11.4		West Nottingham	881	1,137	14.1
	London Grove	1,844	2,734	(c)		West Pikeland	683	782	10.1
	Lower Oxford	1,657	2,007	18.3		West Sadsbury	802	1,102	(e)
13	Malvern	1,764	2,268	1.3		Westtown	994	1,947	8.8
6	Modena	824	859	(a)		West Vincent	1,116	1,431	17.9
	New Garden	3,027	3,718	16.1		West Whiteland	1,573	4,412	12.9
	Newlin	957	1,477	11.8		Willistown	2,709	6,492	18.5
	New London	660	845	11.9					

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

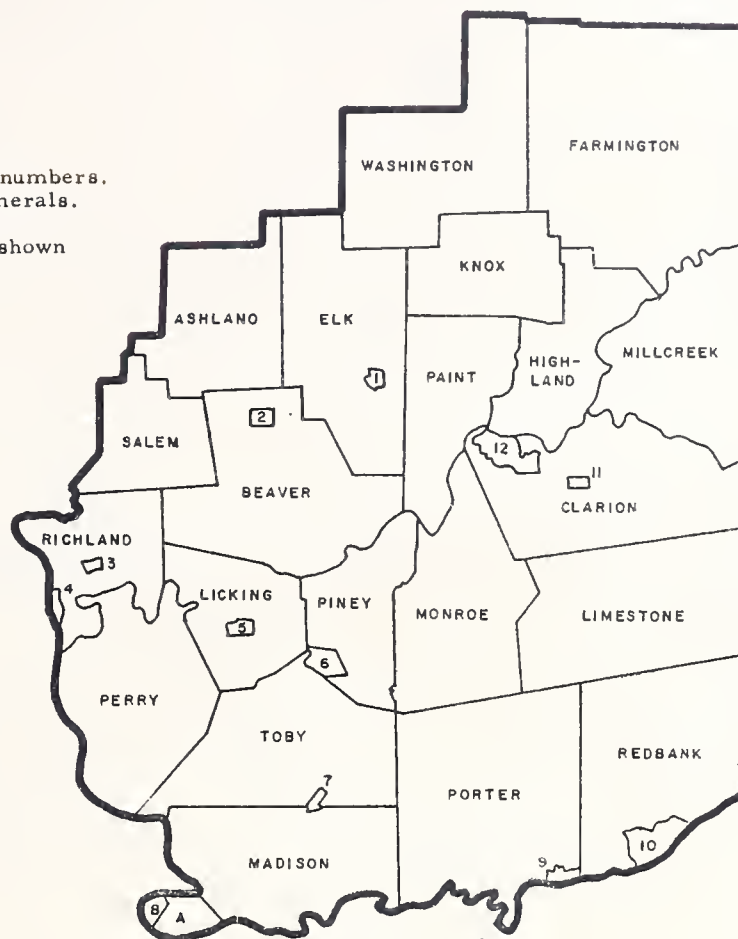
(a) The combined area for East Fallowfield township and Modena borough was 15.7 square miles. (b) The combined area for Honeybrook township and Honeybrook borough was 25.3 square miles. (c) The combined area for London Grove township and Avondale borough was 19.0 square miles. (d) The combined area for West Nantmeal township and Elverson borough was 15.0 square miles. (e) The combined area West Sadsbury township and Atglen borough was 11.4 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 234.

# CLARION COUNTY

## KEY

Boroughs are identified by Arabic numbers.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.



POPULATION AND AREA FOR MUNICIPALITIES IN CLARION COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Clarion County, total	38,344	37,408	599.5					
	Ashland	833	846	23.2		Millcreek	316	230	28.7
	Beaver	1,503	1,527	33.2		Monroe	1,228	1,140	30.5
A	Brady	161	130	2.1	9	New Bethlehem	1,604	1,599	0.5
5	Callensburg	261	280	(c)		Paint	502	703	20.2
12	Clarion	4,409	4,958	1.4		Perry	1,491	1,287	29.0
	Clarion	1,975	2,090	(a)		Piney	550	524	(d)
8	East Brady	1,400	1,282	1.2		Porter	1,528	1,345	42.1
	Elk	1,131	1,166	(b)		Redbank	1,710	1,607	(e)
	Farmington	1,584	1,570	61.9		Richland	760	673	(f)
4	Foxburg	422	383	(f)	7	Rimersburg	1,398	1,323	0.2
10	Hawthorn	666	612	(e)	3	St. Petersburg	451	417	(f)
	Highland	397	359	19.8		Salem	827	809	15.8
2	Knox	1,213	1,247	0.5	1	Shippenville	522	599	(b)
	Knox	1,122	1,134	18.0	6	Sligo	913	814	(d)
	Licking	607	508	(c)	11	Strattanville	562	547	(a)
	Limestone	1,118	1,152	36.0		Toby	1,656	1,414	28.5
	Madison	1,979	1,491	26.7		Washington	1,545	1,642	32.4

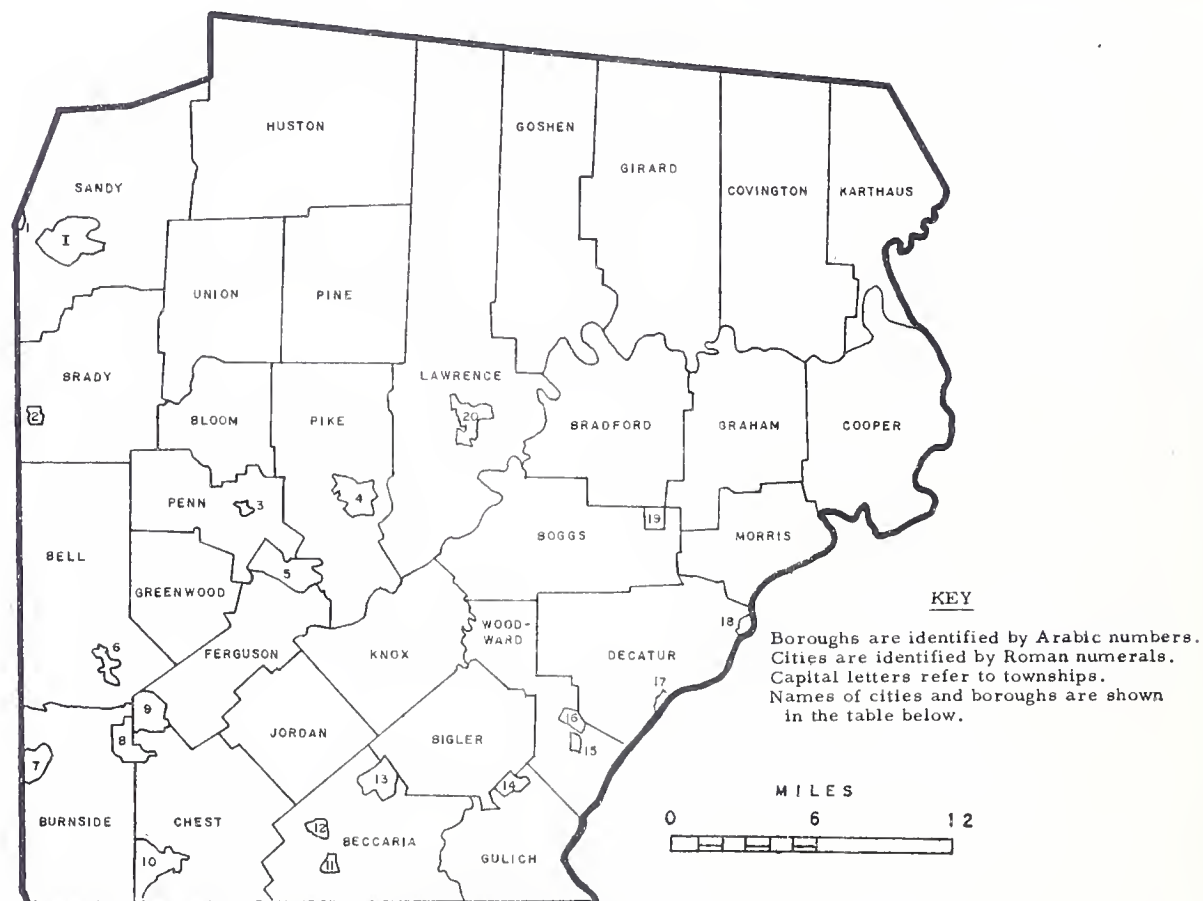
(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Clarion township and Strattanville borough was 31.9 square miles. (b) The combined area for Elk township and Shippenville borough was 30.5 square miles. (c) The combined area for Licking township and Callensburg borough was 18.2 square miles. (d) The combined area for Piney township and Sligo borough was 18.2 square miles. (e) The combined area for Redbank township and Hawthorn borough was 31.8 square miles. (f) The combined area for Richland township and Foxburg and St. Petersburg boroughs was 17.0 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 234.



# CLEARFIELD COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN CLEARFIELD COUNTY

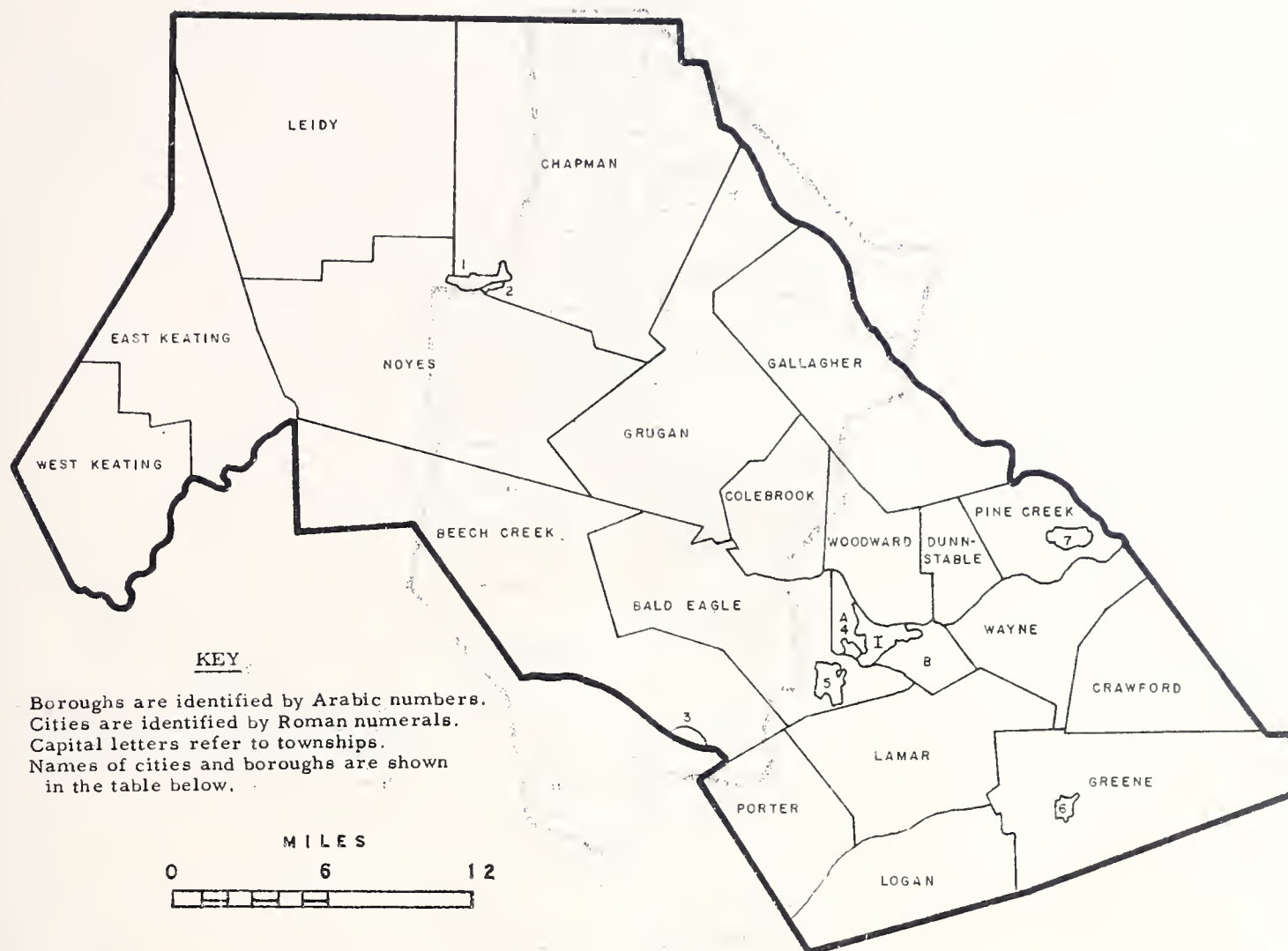
No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Clearfield County, total	85,957	81,534	1,143.6					
	Beccaria	2,706	2,091	(a)		Greenwood	495	458	21.2
	Bell	1,056	846	(b)		Gulich	1,735	1,399	(i)
	Bigler	2,329	1,863	24.4	15	Houtzdale	1,306	1,239	0.3
	Bloom	527	412	18.9		Huston	1,298	1,263	63.2
	Boggs	1,597	1,588	(c)	12	Irvona	915	781	0.9
	Bradford	3,054	3,100	37.9		Jordan	683	533	22.9
	Brady	2,111	1,874	(d)		Karthauss	863	841	36.3
16	Brisbin	463	398	(k)		Knox	804	762	26.1
7	Burnside	400	307	(e)		Lawrence	6,222	7,829	82.3
	Burnside	1,307	1,138	(e)	5	Lumber City	262	164	(j)
	Chest	656	499	(f)	6	Mahaffey	646	582	(b)
18	Chester Hill	954	919	(g)		Morris	3,228	2,927	19.5
20	Clearfield	9,357	9,270	1.7	9	Newburg	182	150	(f)
11	Coalport	1,052	821	0.3	8	New Washington	65	55	(e)
	Cooper	3,073	2,801	40.5	17	Osceola	1,992	1,777	0.4
	Covington	453	512	52.0		Penn	1,061	1,037	(j)
4	Curwensville	3,332	3,231	2.3		Pike	1,643	1,805	42.2
	Decatur	3,273	3,042	(g)		Pine	24	28	32.3
1	DuBois	11,497	10,667	2.9	14	Ramey	696	558	(i)
1	Falls Creek	56	85	(h)		Sandy	5,245	5,322	52.2
	Ferguson	551	433	23.9	2	Troutville	223	209	(d)
	Girard	852	680	63.2		Union	452	471	32.0
13	Glen Hope	199	169	(a)	19	Wallaceton	440	429	(c)
	Goshen	536	525	49.2	10	Westover	605	492	(f)
	Graham	700	733	30.2		Woodward	2,192	1,890	(k)
3	Grampian	589	529	(j)					

(1) As explained in the key in the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Beccaria township and Glen Hope borough was 39.9 square miles. (b) The combined area for Bell township and Mahaffey borough was 55.3 square miles. (c) The combined area for Boggs township and Wallaceton borough was 36.9 square miles. (d) The combined area for Brady township and Troutville borough was 37.7 square miles. (e) The combined area for Burnside township and Burnside and New Washington boroughs was 47.2 square miles. (f) The combined area for Chest township and Newburg and Westover boroughs was 38.9 square miles. (g) The combined area for Decatur township and Chester Hill borough was 38.1 square miles. (h) Of the total land area in Falls Creek borough, 0.3 square miles are located in Clearfield County and 0.9 square miles in Jefferson County. (i) The combined area for Gulich township and Ramey borough was 21.6 square miles. (j) The combined area for Penn township and Grampian and Lumber City boroughs was 26.2 square miles. (k) The combined area for Woodward township and Brisbin borough was 22.3 square miles.

Source: U.S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 234.

# CLINTON COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN CLINTON COUNTY

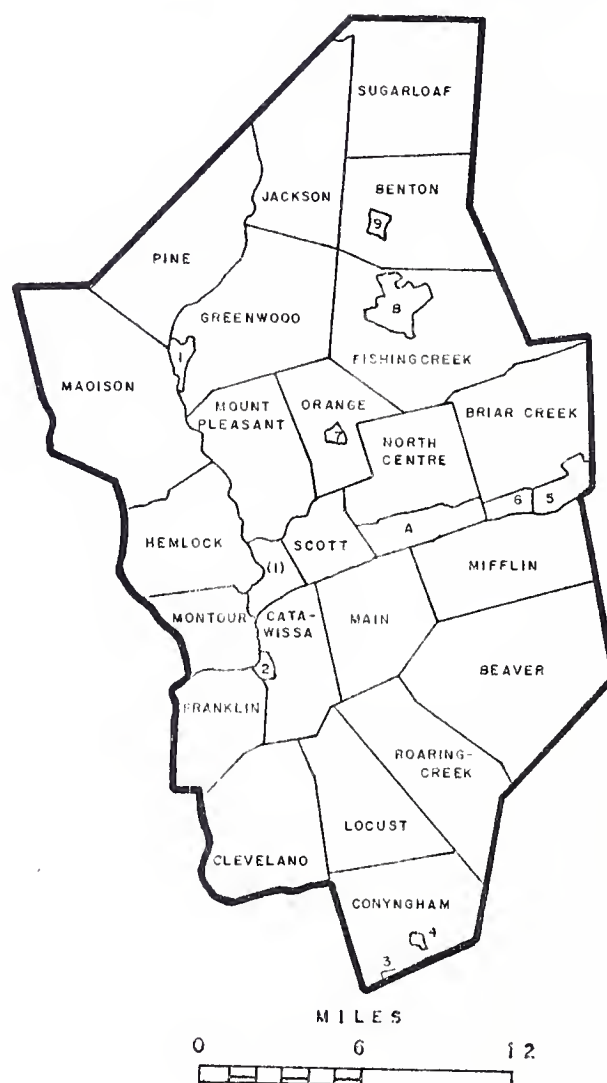
No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Clinton County, total	36,532	37,619	901.8					
A	Allison	1,099	293	2.6		Lamar	1,498	1,687	40.3
7	Avis	1,193	1,262	0.2		Leidy	341	376	91.6
	Bald Eagle	990	1,189	45.6	I	Lock Haven	11,381	11,748	2.0
3	Beech Creek	574	634	(a)		Logan	687	631	29.7
	Beech Creek	675	741	(a)	6	Loganton	346	385	(b)
B	Castanea	1,101	1,218	5.6	5	Mill Hall	1,677	1,891	0.8
	Chapman	1,229	1,101	116.4		Noyes	876	643	86.9
	Colebrook	266	211	17.6		Pine Creek	1,548	2,083	15.5
	Crawford	378	457	22.8		Porter	874	1,041	23.6
	Dunnstable	485	735	9.5	1	Renovo	3,751	3,316	1.1
	East Keating	51	49	50.2	2	South Renovo	862	777	0.3
4	Flemington	1,446	1,608	0.4		Wayne	559	600	23.0
	Gallagher	139	149	56.1		West Keating	129	106	42.9
	Greene	851	815	(b)		Woodward	1,476	1,853	18.3
	Grugan	50	20	51.9					

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
 (2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area of Beech Creek township and Beech Creek borough was 94.7 square miles. (b) The combined area for Greene township and Loganton borough was 52.2 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 235.

# COLUMBIA COUNTY



## KEY

Boroughs are identified by Arabic numerals.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.

POPULATION AND AREA FOR MUNICIPALITIES IN COLUMBIA COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Columbia County, total	53,460	53,489	484.4					
3	Ashland	-	230	(a)		Jackson	424	374	19.6
	Beaver	776	689	35.4		Locust	1,182	1,112	17.6
9	Benton	890	981	(b)		Madison	942	951	35.7
	Benton	747	690	(b)		Main	552	553	16.4
5	Berwick	14,010	13,353	3.0		Mifflin	1,478	1,641	19.3
(1)	Bloomsburg town	10,633	10,655	4.6	1	Millville	878	952	(e)
6	Briar Creek	348	399	(c)		Montour	801	1,015	9.0
	Briar Creek	1,546	1,871	(c)		Mount Pleasant	649	655	16.8
2	Catawissa	2,000	1,824	0.4		North Centre	678	655	16.3
	Catawissa	502	579	12.4		Orange	387	442	(f)
4	Centralia	1,986	1,435	0.2	7	Orangeville	424	444	(f)
	Cleveland	826	775	23.7		Pine	674	683	25.5
	Conyngham	2,009	1,119	21.0		Roaringcreek	445	404	23.7
	Fishingcreek	904	926	(d)		Scott	2,258	3,256	7.1
	Franklin	456	428	12.9	A	South Centre	842	1,127	3.9
	Greenwood	1,306	1,274	(e)	8	Stillwater	189	193	(d)
	Hemlock	1,093	1,301	17.0		Sugarloaf	625	503	26.4

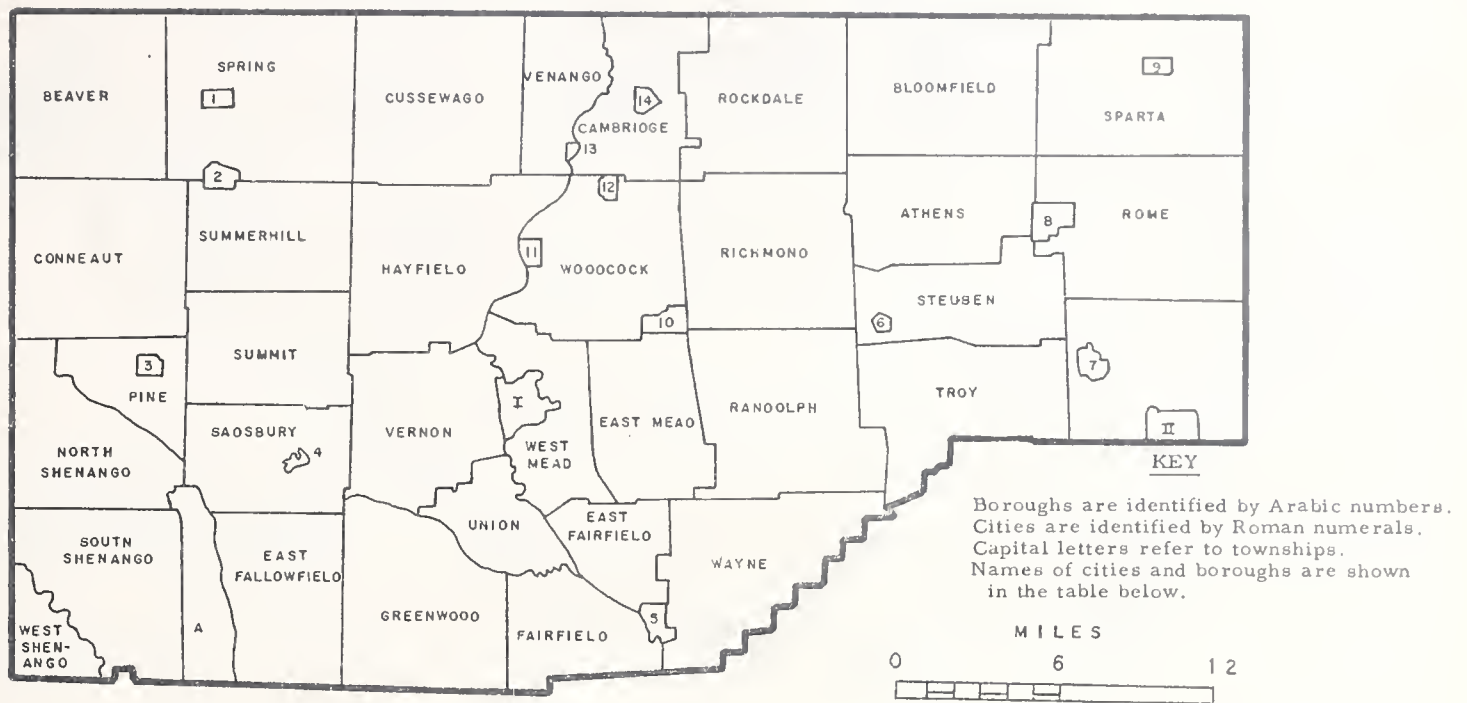
(1) As explained in the key on the map diagrams, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(a) Of the total land area of Ashland borough, less than 0.1 of a square mile is in Columbia County and 1.6 square miles are in Schuylkill County. (b) The combined area for Benton township and Benton borough was 20.1 square miles. (c) The combined area for Briar Creek township and Briar Creek borough was 22.1 square miles. (d) The combined area for Fishingcreek township and Stillwater borough was 32.2 square miles. (e) The combined area for Greenwood township and Millville borough was 29.0 square miles. (f) The combined area for Orange township and Orangeville borough was 13.1 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 235.



# CRAWFORD COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN CRAWFORD COUNTY

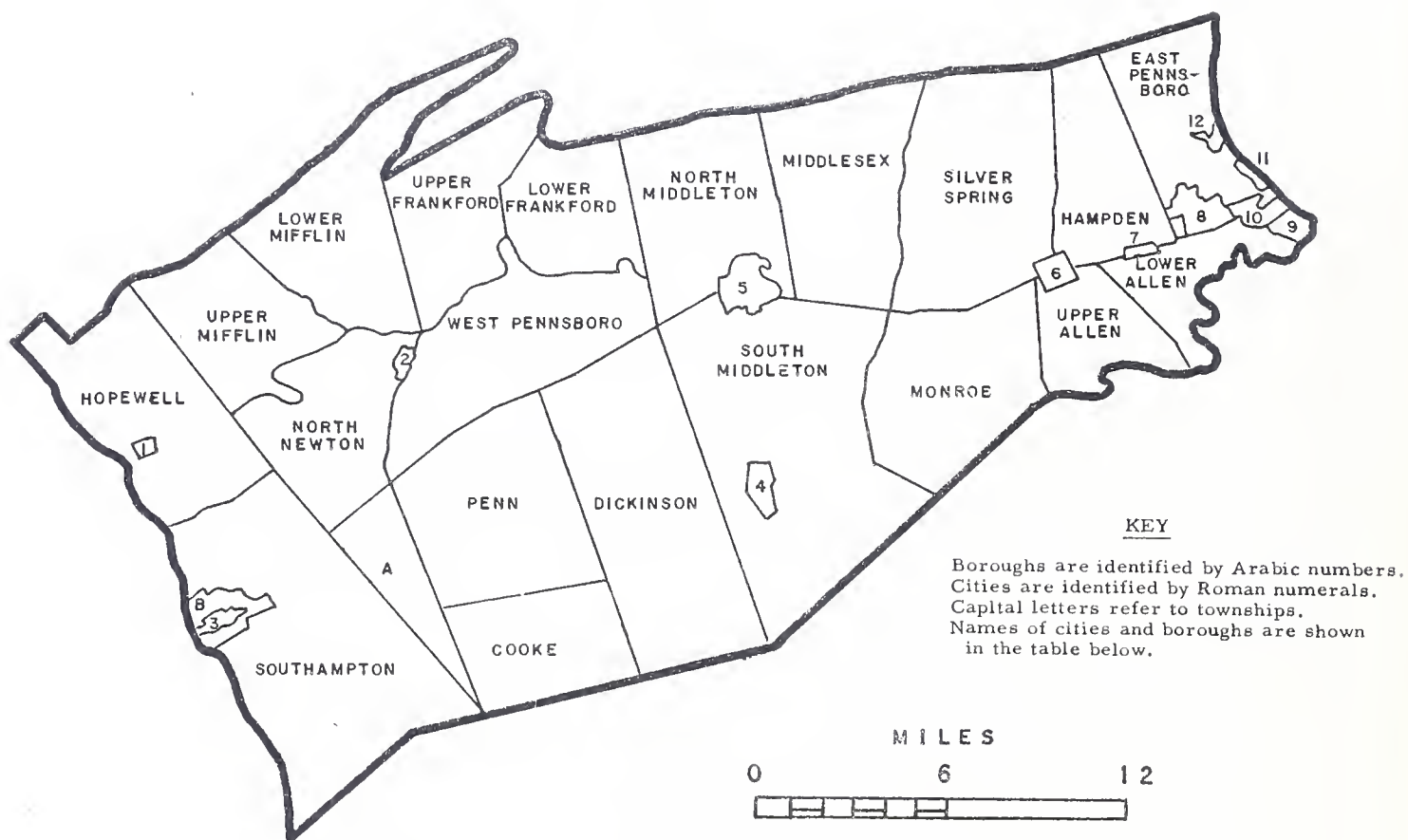
No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Crawford County, total	78,948	77,956	1,016.4					
	Athens	679	693	28.7		Rockdale	819	758	36.7
	Beaver	759	800	36.2		Rome	965	900	(c)
	Bloomfield	1,214	1,161	37.7		Sadsbury	1,499	1,601	(d)
10	Blooming Valley	256	296	(i)	11	Saegertown	836	1,131	(i)
	Cambridge	917	974	21.6		South Shenango	751	898	27.6
14	Cambridge Springs	2,246	2,031	0.8		Sparta	871	921	(e)
8	Centerville	245	238	(c)	9	Spartansburg	482	500	(e)
5	Cochrannton	1,092	1,139	(a)		Spring	1,362	1,325	(f)
	Conneaut	1,235	1,295	40.1	1	Springboro	611	583	(f)
4	Conneaut Lake	676	700	(d)		Steuben	637	678	(g)
2	Conneautville	1,177	1,100	(f)		Summerhill	939	910	25.2
	Cussewago	990	1,027	40.9		Summit	1,446	1,360	26.4
	East Fairfield	498	627	(a)	II	Titusville	8,923	8,356	2.6
	East Fallowfield	981	1,041	28.0	6	Townville	351	361	(g)
	East Mead	1,037	1,064	23.5		Troy	1,019	1,097	31.2
	Fairfield	894	864	19.1		Union	474	526	15.8
	Greenwood	960	1,207	36.6	13	Venango	359	318	(h)
	Hayfield	1,840	1,933	39.1		Venango	485	467	(h)
7	Hydetown	530	679	(b)		Vernon	4,006	4,589	29.5
3	Linesville	1,246	1,255	0.8		Wayne	895	920	35.6
1	Meadville	18,972	16,671	2.3	A	West Fallowfield	558	588	12.1
	North Shenango	511	472	19.9		West Mead	4,818	5,117	20.3
	Oil Creek	1,649	1,755	(b)		West Shenango	234	321	7.2
	Pine	350	327	6.9	12	Woodcock	130	123	(i)
	Randolph	1,667	1,561	42.9		Woodcock	1,783	1,664	(i)
	Richmond	1,074	1,034	36.4					

(1) As explained in the key and the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
 (2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for East Fairfield township and Cochrannton borough was 14.0 square miles. (b) The combined area for Oil Creek township and Hydetown borough was 34.6 square miles. (c) The combined area for Rome township and Centerville borough was 42.8 square miles. (d) The combined area for Sadsbury township and Conneaut Lake borough was 24.1 square miles. (e) The combined area for Sparta township and Spartansburg borough was 42.6 square miles. (f) The combined area for Spring township and Conneautville and Springboro boroughs was 47.3 square miles. (g) The combined area for Steuben township and Townville borough was 25.1 square miles. (h) The combined area for Venango township and Venango borough was 17.1 square miles. (i) The combined area for Woodcock township and Blooming Valley, Saegertown and Woodcock boroughs was 37.1 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 235.

# CUMBERLAND COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN CUMBERLAND COUNTY

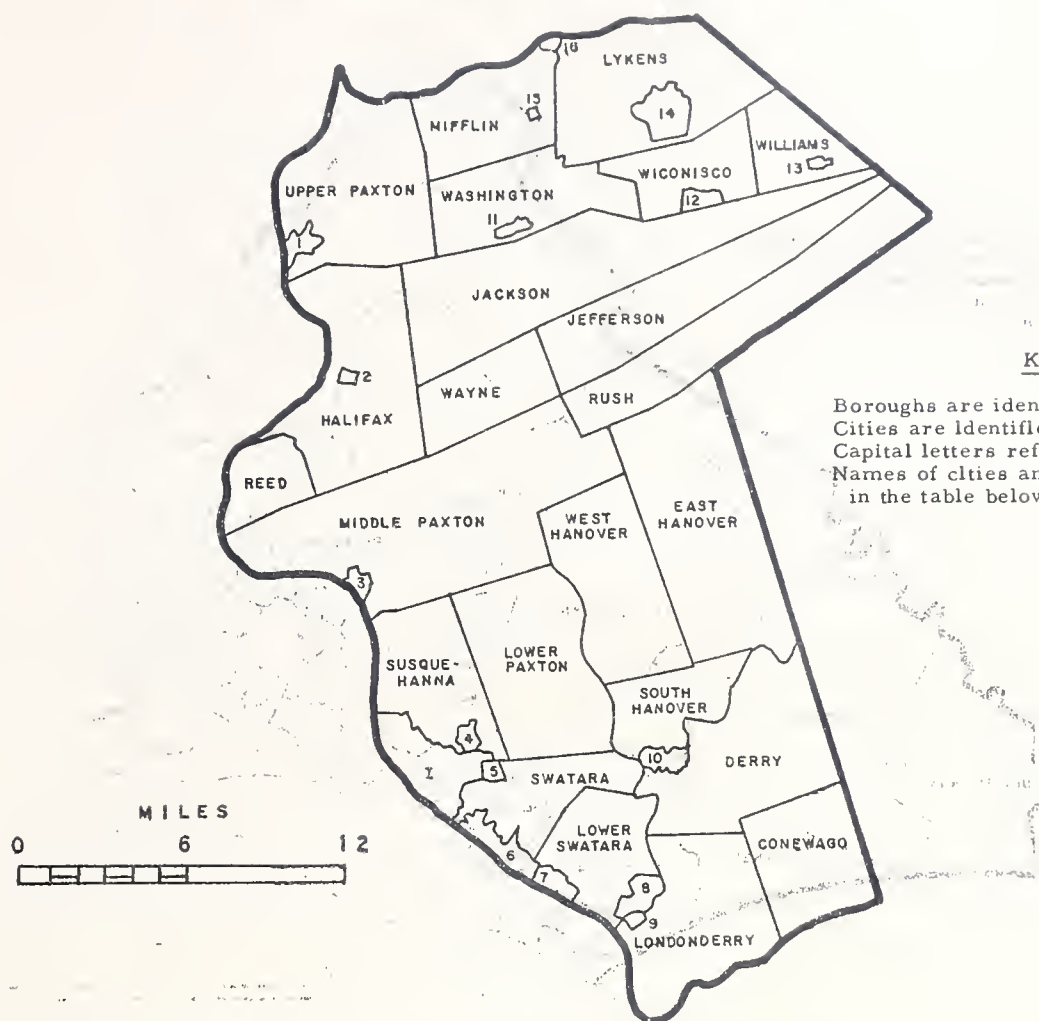
No. (1)	Name (1)	Population		Land areas (2) (square miles)	No. (1)	Name (1)	Population		Land areas (2) (square miles)
		1950	1960				1950	1960	
	Cumberland County, total	94,457	124,816	554.1					
8	Camp Hill	5,934	8,559	1.4	2	Newville	1,788	1,656	0.5
5	Carlisle	16,812	16,623	2.5		North Middleton	3,208	5,079	26.1
	Cooke	36	16	19.2		North Newton	930	1,088	22.5
	Dickinson	1,936	2,025	46.2		Penn	1,183	1,374	29.4
	East Pennsboro	5,582	8,977	13.2	3	Shippensburg	5,004	5,071	(c)
	Hampden	2,095	6,558	17.4	B	Shippensburg	1,442	1,321	3.0
	Hopewell	761	849	(a)	7	Shiremanstown	887	1,212	(b)
10	Lemoyne	4,605	4,662	1.0		Silver Spring	2,509	4,044	33.6
	Lower Allen	5,115	11,614	(b)		Southampton	4,204	2,282	51.9
	Lower Frankford	485	620	15.2		South Middleton	715	5,424	51.7
	Lower Mifflin	543	613	24.6	A	South Newton	1,731	847	11.2
6	Mechanicsburg	6,786	8,123	1.6		Upper Allen	1,594	2,631	13.9
	Middlesex	1,632	2,333	25.9		Upper Frankford	770	893	19.4
	Monroe	1,875	2,298	26.8		Upper Mifflin	533	520	22.1
4	Mount Holly Springs	1,701	1,840	1.4	12	West Fairview	1,896	1,718	0.3
1	Newburg	289	283	(a)		West Pennsboro	2,161	2,612	30.4
9	New Cumberland	6,204	9,257	1.5	11	Wormleysburg	1,511	1,794	0.1

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Hopewell township and Newburg borough was 28.8 square miles. (b) The combined area for Lower Allen township and Shiremanstown borough was 10.6 square miles; (c) Of the total land area in Shippensburg borough, 0.7 square miles are located in Cumberland County and 0.3 in Franklin County.

Source: U.S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 235.

# DAUPHIN COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN DAUPHIN COUNTY

No. (1)	Name	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Dauphin County, total	197,784	220,255	519.9					
15	Berrysburg	386	434	(d)	8	Middletown	9,184	11,182	1.6
	Conewago	966	1,353	16.2		Mifflin	488	501	(d)
3	Dauphin	667	638	(c)	1	Millersburg	2,861	2,984	0.4
	Derry	9,993	12,388	27.3	5	Paxtang	1,857	1,916	0.6
	East Hanover	1,557	1,535	38.6	4	Penbrook	3,691	3,671	0.4
11	Elizabethville	1,506	1,455	0.3		Reed	246	251	6.3
14	Gratz	653	704	(b)	9	Royalton	1,175	1,128	0.1
2	Halifax	822	824	(a)		Rush	103	113	24.4
	Halifax	1,424	1,747	(a)		South Hanover	1,581	1,841	11.7
1	Harrisburg	89,544	79,697	6.2	6	Steelton	12,574	11,266	1.8
7	Highspire	2,799	2,999	0.6		Susquehanna	11,081	17,474	15.6
10	Hummelstown	3,789	4,474	1.1		Swatara	9,350	14,795	13.1
	Jackson	998	1,016	39.5	16	Uniontown	323	348	(d)
	Jefferson	150	178	22.3		Upper Paxton	2,225	2,555	25.8
	Londonderry	1,595	3,053	22.7		Washington	912	932	18.2
	Lower Paxton	6,546	17,618	29.1		Wayne	363	432	14.6
	Lower Swatara	3,557	4,508	12.2		West Hanover	1,495	2,770	23.0
12	Lykens Borough	2,735	2,527	1.0		Wiconisco	1,992	1,801	11.3
	Lykens	1,000	975	(b)		Williams	1,109	951	8.3
	Middle Paxton	2,155	3,124	(c)	13	Williamstown	2,332	2,097	0.5

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
 (2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area of Halifax township and Halifax borough was 28.0 square miles. (b) The combined area of Lykens township and Gratz borough are 28.0 square miles. (c) The combined area of Middle Paxton township and Dauphin borough was 52.9 square miles. (d) The combined area for Mifflin township and Berrysburg and Uniontown boroughs was 16.2 square miles.

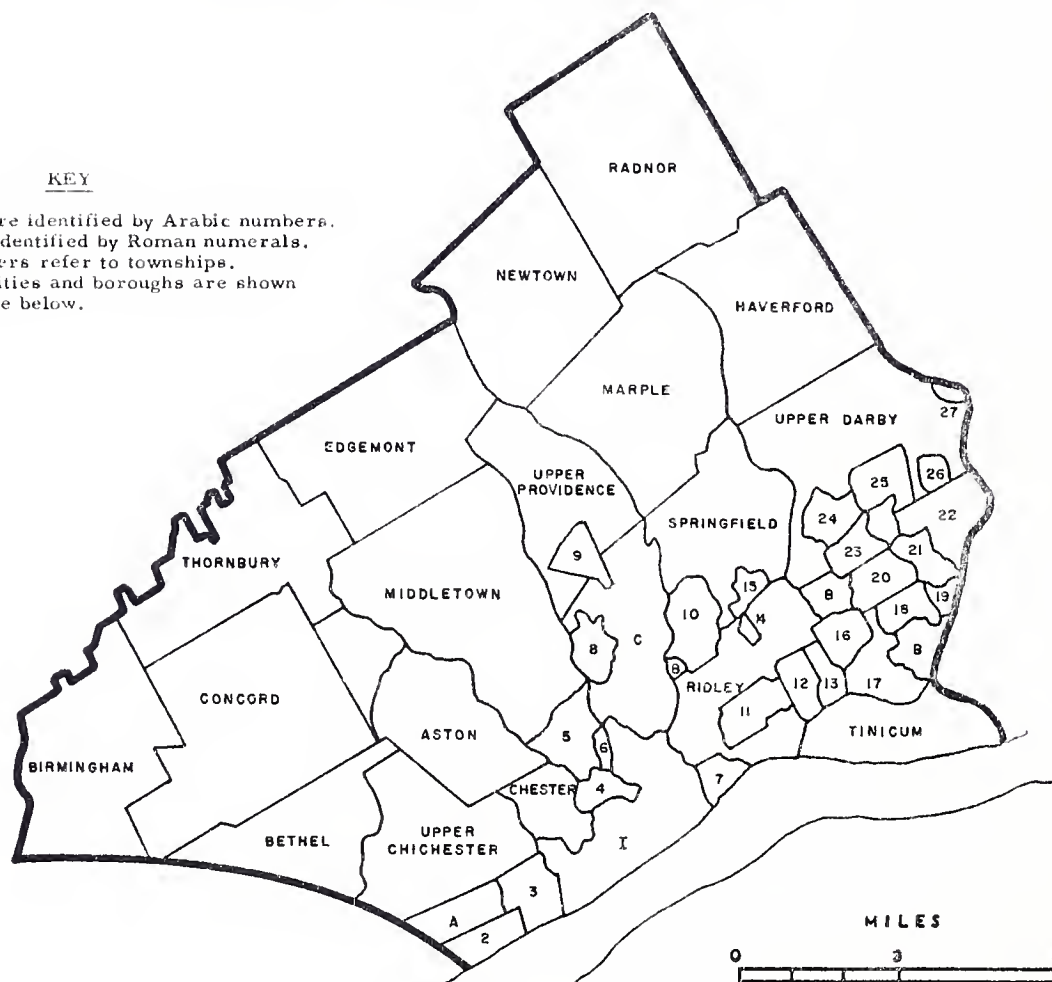
Source: U.S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 235.



# DELAWARE COUNTY

## KEY

Boroughs are identified by Arabic numerals.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.



## POPULATION AND AREA FOR MUNICIPALITIES IN DELAWARE COUNTY

(For a breakdown of areas subdivided since 1940, see Appendix A.)

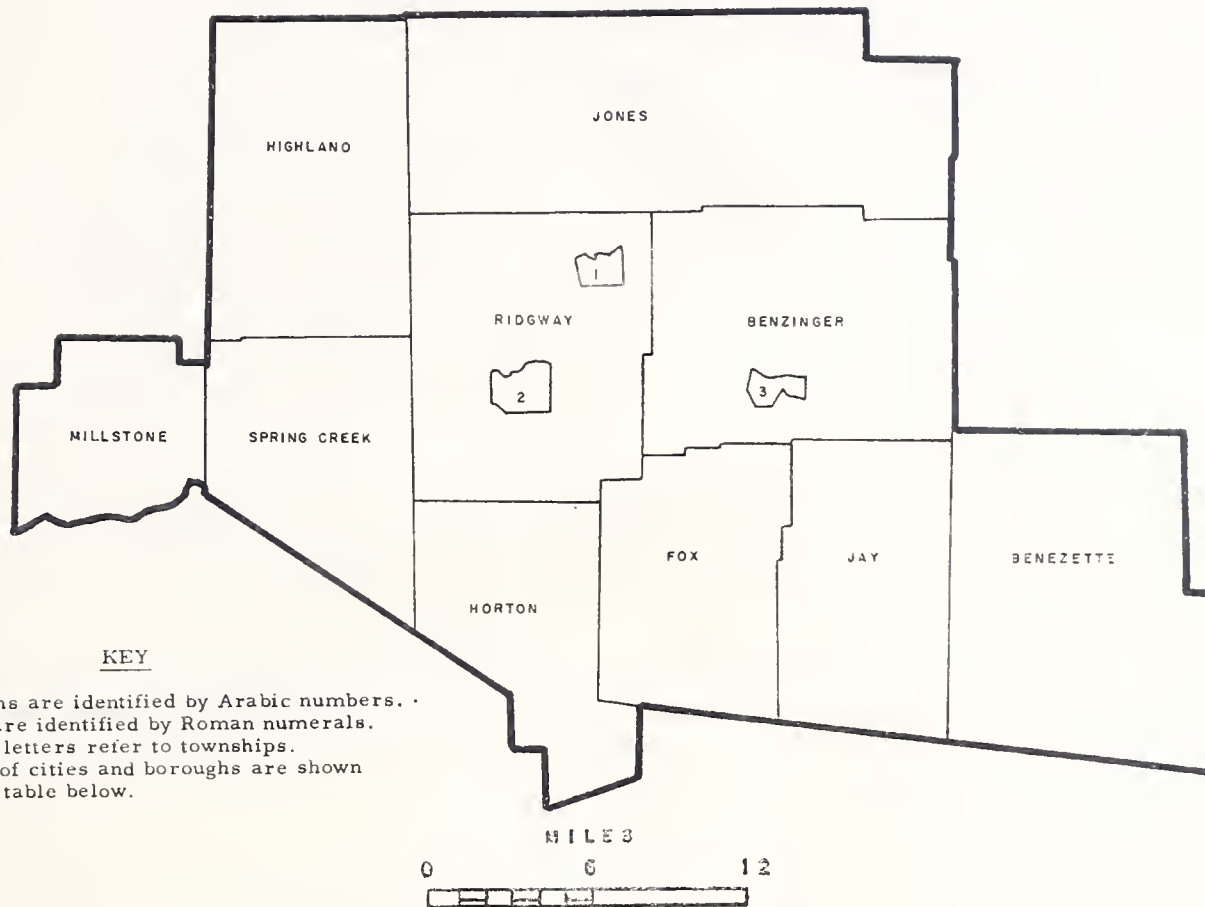
No. (1)	Name	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Delaware County, total	414, 234	553, 154	185.0					
23	Aldan	3, 430	4, 324	0.6	27	Middletown	6, 038	11, 256	13.6
	Aston	5, 576	10, 595	8.5		Millbourne	901	793	(c)
	Bethel	1, 283	1, 834	5.4	15	Morton	1, 352	2, 207	0.1
	Birmingham	836	1, 093	8.9	C	Nether Providence	6, 173	10, 380	(a)
5	Brookhaven	1, 042	5, 280	1.7		Newtown	3, 518	9, 270	9.9
1	Chester	66, 039	63, 658	4.5	13	Norwood	5, 246	6, 729	0.9
	Chester	3, 547	3, 602	3.3	6	Parkside	1, 637	2, 426	0.2
1	Chester Heights	474	534	2.2	12	Prospect Park	5, 834	6, 596	0.8
24	Clifton Heights	7, 549	8, 005	0.7		Radnor	14, 709	21, 697	13.9
20	Collingdale	8, 443	10, 268	0.9		Ridley	17, 212	35, 738	(b)
19	Colwyn	2, 143	3, 074	0.3	11	Ridley Park	4, 921	7, 387	1.1
	Concord	1, 945	3, 149	13.7	8	Rose Valley	498	626	(a)
21	Darby	13, 154	14, 059	0.9	14	Rutledge	919	947	(b)
B	Darby ( 3 parts)	3, 454	12, 598	1.5	18	Sharon Hill	5, 464	7, 123	0.8
26	East Lansdowne	3, 527	3, 224	0.2		Springfield	10, 917	26, 733	6.6
7	Eddystone	3, 014	3, 006	0.9	10	Swarthmore	4, 825	5, 753	1.4
	Edgemont	1, 048	1, 404	9.9		Thornbury	2, 101	2, 035	9.2
17	Folcroft	1, 909	7, 013	1.5		Tinicum	5, 314	4, 375	5.6
16	Glenolden	6, 450	7, 249	0.8	3	Trainer	2, 001	2, 358	0.7
	Haverford	39, 641	54, 019	10.0	4	Upland	4, 081	4, 343	0.6
25	Lansdowne	12, 169	12, 601	1.2		Upper Chichester	6, 997	9, 682	6.7
A	Lower Chichester	2, 938	4, 460	1.1		Upper Darby	84, 951	93, 158	(c)
2	Marcus Hook	3, 843	3, 299	1.0		Upper Providence	3, 598	6, 059	5.7
	Marple	4, 779	19, 722	10.5	22	Yeadon	11, 068	11, 610	1.6
9	Media	5, 726	5, 803	0.8					

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Nether Providence township and Rose Valley borough was 5.4 square miles. (b) The combined area for Ridley township and Rutledge borough was 5.5 square miles. (c) The combined area for Upper Darby township and Millbourne borough was 7.6 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC (Pl)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 235.

# ELK COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN ELK COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Elk County, total	34,503	37,328	809.2					
	Benezette	430	363	109.8		Jones	1,850	1,881	140.1
	Benzinger	3,802	5,934	93.6		Millstone	129	94	40.5
	Fox	2,431	2,738	62.9	2	Ridgway	6,244	6,387	2.5
	Highland	916	796	86.6		Ridgway	2,507	2,404	86.6
	Horton	1,515	1,418	56.3	3	St. Marys	7,846	8,065	1.7
	Jay	1,963	2,009	65.3		Spring Creek	303	273	61.2
1	Johnsonburg	4,567	4,966	2.1					

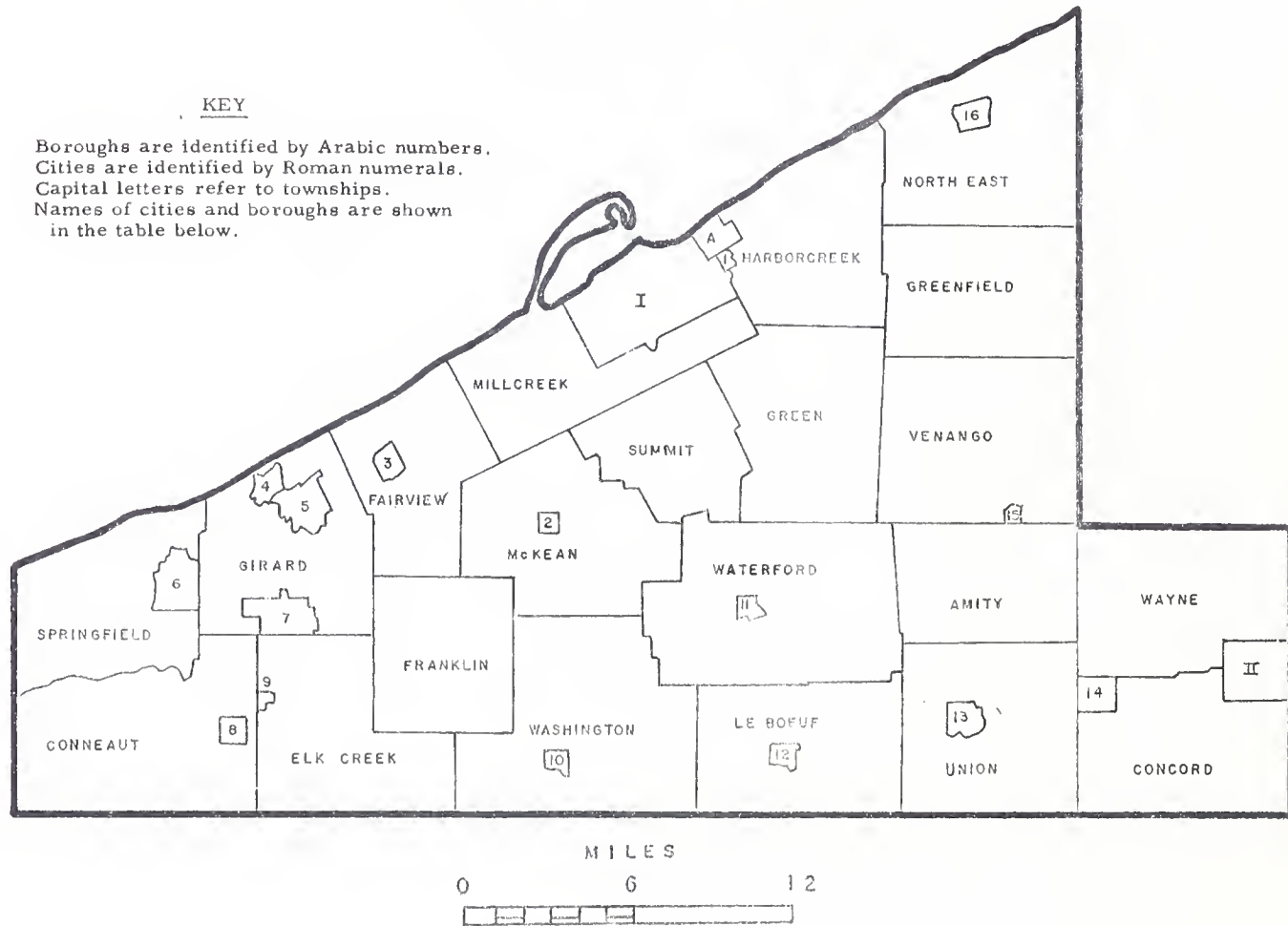
(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
 (2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

Source: U.S. Department of Commerce, Bureau of the Census, Advance Reports PC(A1)-40, 1960 Census of Population, Table 2, and PC (P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 235.

# ERIE COUNTY

## KEY

Boroughs are identified by Arabic numbers.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.



## POPULATION AND AREA FOR MUNICIPALITIES IN ERIE COUNTY

(For a breakdown of areas subdivided since 1940, see Appendix A.)

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Erie County, total	219,388	250,682	810.9					
8	Albion	1,729	1,630	1.1	A	Lawrence Park	4,154	4,403	1.7
	Amity	748	739	28.6		Le Boeuf	960	1,013	(e)
	Concord	948	1,126	(a)		McKean	1,563	2,051	(f)
	Conneaut	1,462	1,734	43.5	2	Middleboro	379	442	(f)
II	Corry	7,911	7,744	5.3		Mill Creek	17,037	28,441	35.6
9	Cranesville	602	575	(b)	12	Mill Village	324	336	(e)
6	East Springfield	499	511	(g)	16	North East	4,247	4,217	1.2
10	Edinboro	1,567	1,703	(i)		North East	3,083	4,093	42.9
14	Elgin	202	218	(a)	7	Platea	290	357	(d)
	Elk Creek	1,204	1,269	(b)		Springfield	1,775	2,132	(g)
I	Erie	130,803	138,440	16.2		Summit	2,240	3,424	23.8
3	Fairview	697	1,399	(c)		Union	1,307	1,430	37.1
	Fairview	2,328	3,887	(c)	13	Union City	3,911	3,819	1.7
	Franklin	769	790	29.3		Venango	1,191	1,305	(h)
5	Girard	2,141	2,451	1.4		Washington	1,648	1,906	(i)
	Girard	2,149	2,432	(d)	11	Waterford	1,195	1,390	(j)
	Greene	2,166	3,080	38.2		Waterford	1,486	1,737	(j)
	Greenfield	983	926	34.5	15	Wattsburg	343	401	(h)
	Harborcreek	7,475	10,569	34.6		Wayne	1,092	1,306	39.5
4	Lake City	1,369	1,722	1.3	1	Wesleyville	3,411	3,534	0.4

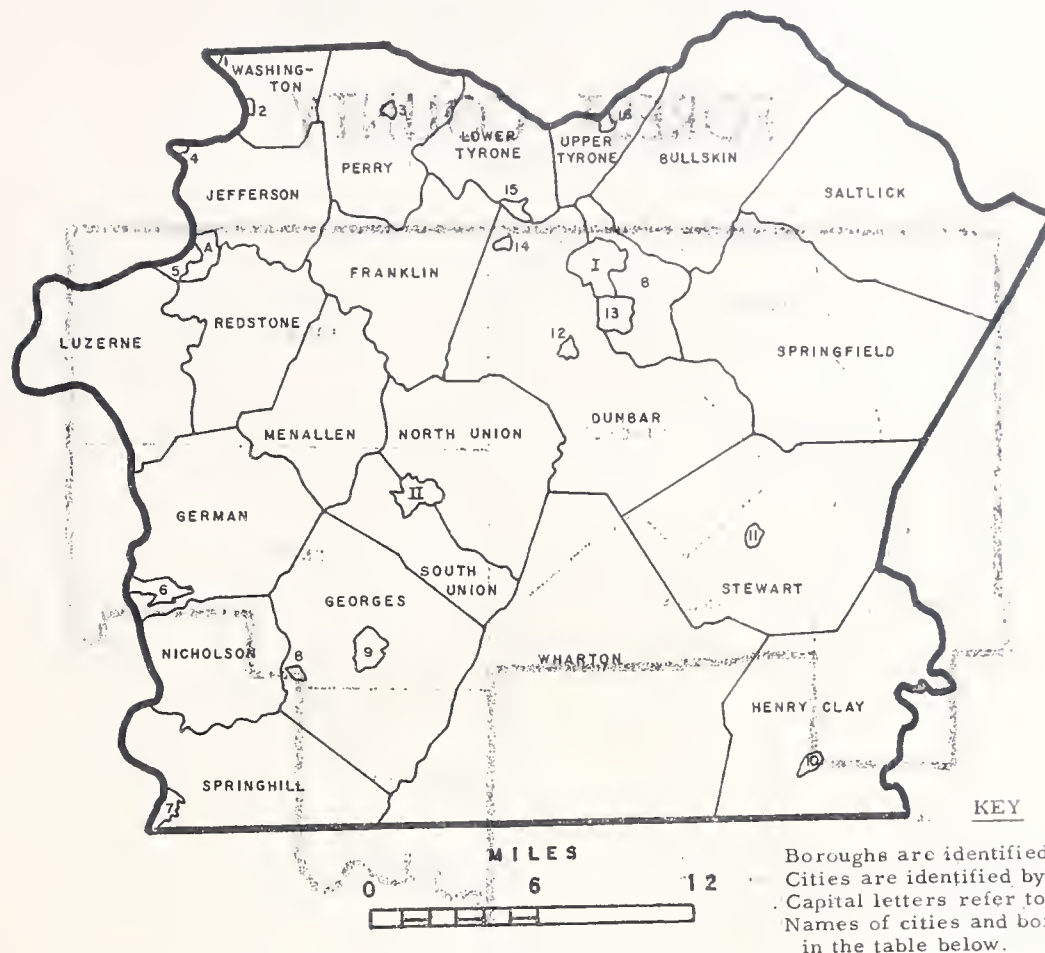
(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Concord township and Elgin borough was 34.6 square miles. (b) The combined area for Elk Creek township and Cranesville borough was 36.3 square miles. (c) The combined area for Fairview township and Fairview borough was 29.4 square miles. (d) The combined area for Girard township and Platea borough was 37.5 square miles. (e) The combined area for LeBoeuf township and Mill Village borough was 35.1 square miles. (f) The combined area for McKean township and Middleboro borough was 37.9 square miles. (g) The combined area for Springfield township and East Springfield borough was 38.0 square miles. (h) The combined area for Venango township and Wattsburg borough was 44.3 square miles. (i) The combined area for Washington township and Edinboro borough was 49.7 square miles. (j) The combined area for Waterford township and Waterford borough was 50.2 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, pp. 235 and 236.



# FAYETTE COUNTY



## POPULATION AND AREA FOR MUNICIPALITIES IN FAYETTE COUNTY

(For a breakdown of areas subdivided since 1940, see Appendix A.)

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	<b>Fayette County, total</b>	189,899	169,340	800.1					
1	Belle Vernon	2,271	1,784	0.2					
	Brownsville	7,643	6,055	1.0					
A	Brownsville	1,800	1,365	1.6					
5	Bullskin	4,257	4,567	43.8					
I	Connellsville	13,293	12,814	1.8					
B	Connellsville	2,612	2,525	11.4					
15	Dawson	723	707	(c)					
12	Dunbar	1,363	1,536	0.2					
	Dunbar	8,409	7,656	61.5					
16	Everson	1,520	1,304	0.2					
9	Fairchance	2,091	2,120	1.0					
2	Fayette City	1,404	1,159	0.3					
	Franklin	3,256	2,458	30.1					
	Georges	8,581	7,140	(a)					
	German	12,040	8,442	33.9					
	Henry Clay	1,260	1,372	(b)					
	Jefferson	2,854	2,258	(e)					
	Lower Tyrone	1,105	976	(c)					
	Luzerne	8,392	6,852	29.3					
10	Markleysburg	291	345	(b)					
6	Masontown	4,550	4,730	1.1					
	Menallen	5,922	5,122	22.4					
	Newell	N.A.	746	(e)					
	Nicholson	3,185	2,195	21.9					
	North Union	14,471	14,427	32.4					
	Ohiopyle	345	287	(d)					
	Perry	5,273	3,270	(f)					
	Perryopolis	N.A.	1,799	(f)					
	Point Marion	2,197	1,853	0.4					
	Redstone	13,621	9,962	23.2					
	Saltlick	2,804	2,535	38.1					
	Smithfield	1,066	939	(a)					
	South Connellsville	2,610	2,434	1.7					
	South Union	10,660	10,895	17.4					
	Springfield	2,510	2,354	60.1					
	Springhill	4,002	3,001	31.1					
	Stewart	1,017	929	(d)					
	Uniontown	20,471	17,942	1.9					
	Upper Tyrone	2,459	2,226	7.9					
	Vanderbilt	937	826	0.2					
	Washington	4,467	5,245	9.6					
	Wharton	2,167	2,188	101.8					

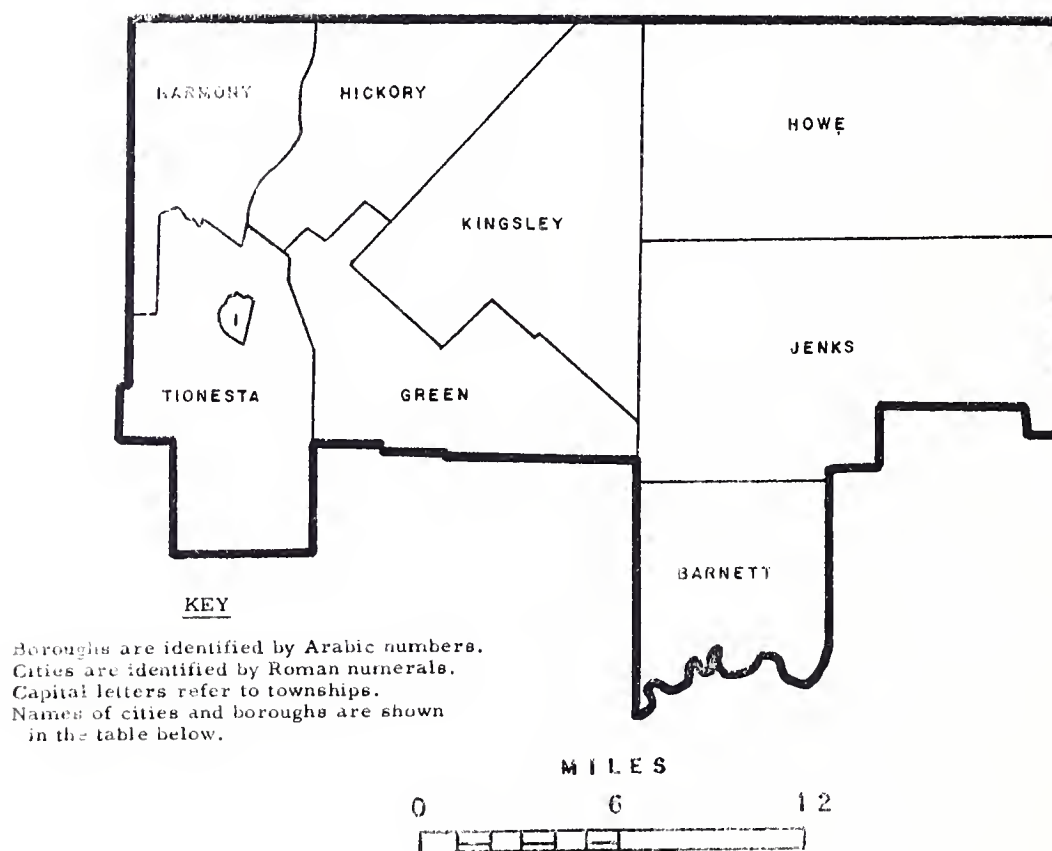
N.A. Not available.

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Georges township and Smithfield borough was 48.4 square miles. (b) The combined area for Henry Clay township and Markleysburg borough was 54.0 square miles. (c) The combined area for Lower Tyrone township and Dawson borough was 16.3 square miles. (d) The combined area for Stewart township and Ohioypyle borough was 51.7 square miles. (e) The combined area for Jefferson township and Newell borough was 20.7 square miles. (f) The combined area for Perry township and Perryopolis borough was 21.5 square miles.

Source: U.S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 236.

# FOREST COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN FOREST COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Forest County, total	4,944	4,485	420.9					
	Barnett	359	323	34.8		Jenks	1,365	1,267	83.9
	Green	252	232	41.8		Kingsley	236	195	59.9
	Harmony	711	582	34.0	1	Tionesta	728	778	(a)
	Hickory	622	547	35.2		Tionesta	455	357	(a)
	Howe	216	204	84.9					

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

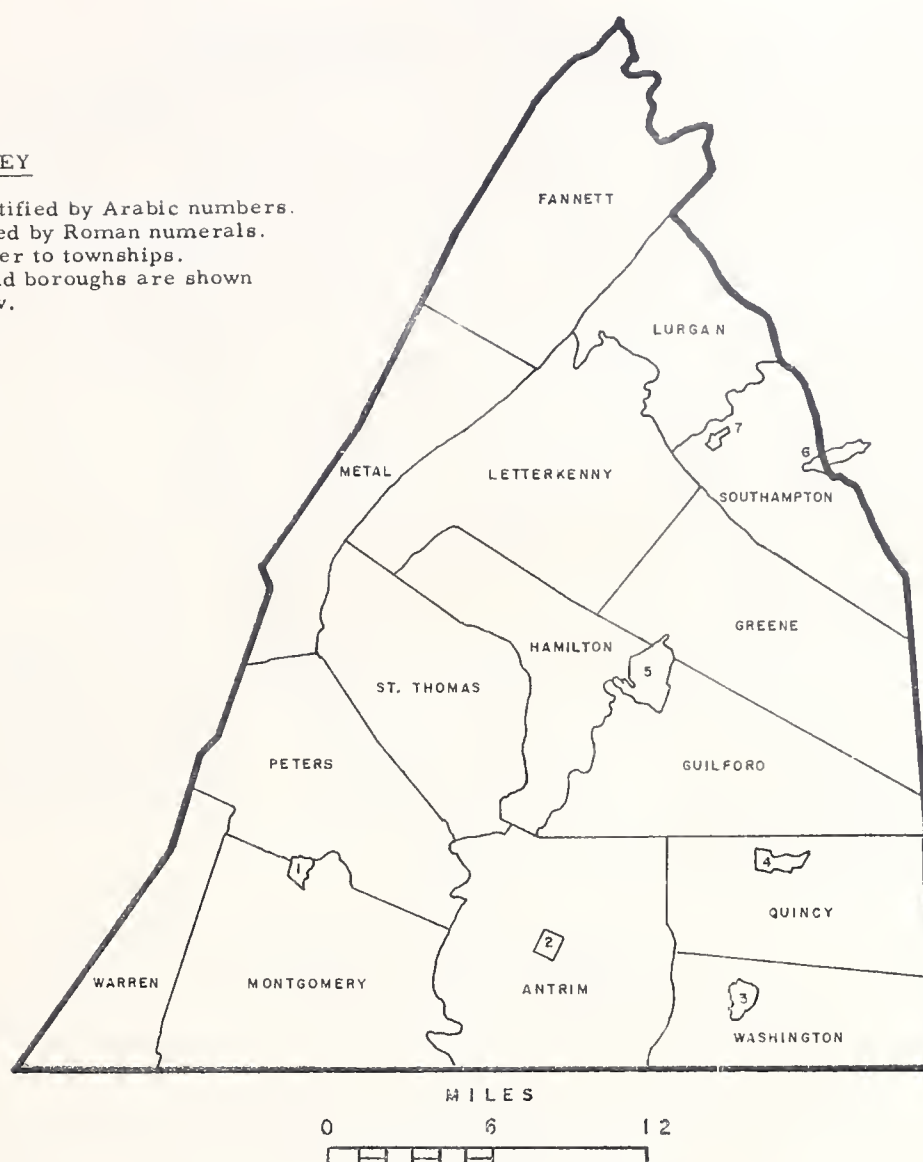
(a) The combined area for Tionesta township and Tionesta borough was 46.4 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 236.

# FRANKLIN COUNTY

## KEY

Boroughs are identified by Arabic numbers.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.



POPULATION AND AREA FOR MUNICIPALITIES IN FRANKLIN COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Franklin County, total	75,927	88,172	754.3					
	Antrim	4,684	5,729	67.4	4	Mont Alto	984	1,039	(a)
5	Chambersburg	17,212	17,670	3.5		Montgomery	2,589	2,819	70.1
	Fannett	1,737	1,663	64.0	7	Orrstown	295	318	(c)
2	Greencastle	2,661	2,988	1.2		Peters	3,353	3,488	52.4
	Greene	5,229	6,953	59.1		Quincy	4,647	5,084	(a)
	Guilford	5,057	7,388	52.4		St. Thomas	2,130	3,026	52.5
	Hamilton	1,978	3,077	35.5	6	Shippensburg	718	1,067	(b)
	Letterkenny	1,166	1,208	76.2		Southampton	2,066	2,678	(c)
	Lurgan	1,256	1,406	31.3		Warren	342	307	28.4
1	Mercersburg	1,613	1,759	0.5		Washington	4,674	6,889	37.4
	Metal	1,202	1,189	38.0	3	Waynesboro	10,334	10,427	2.6

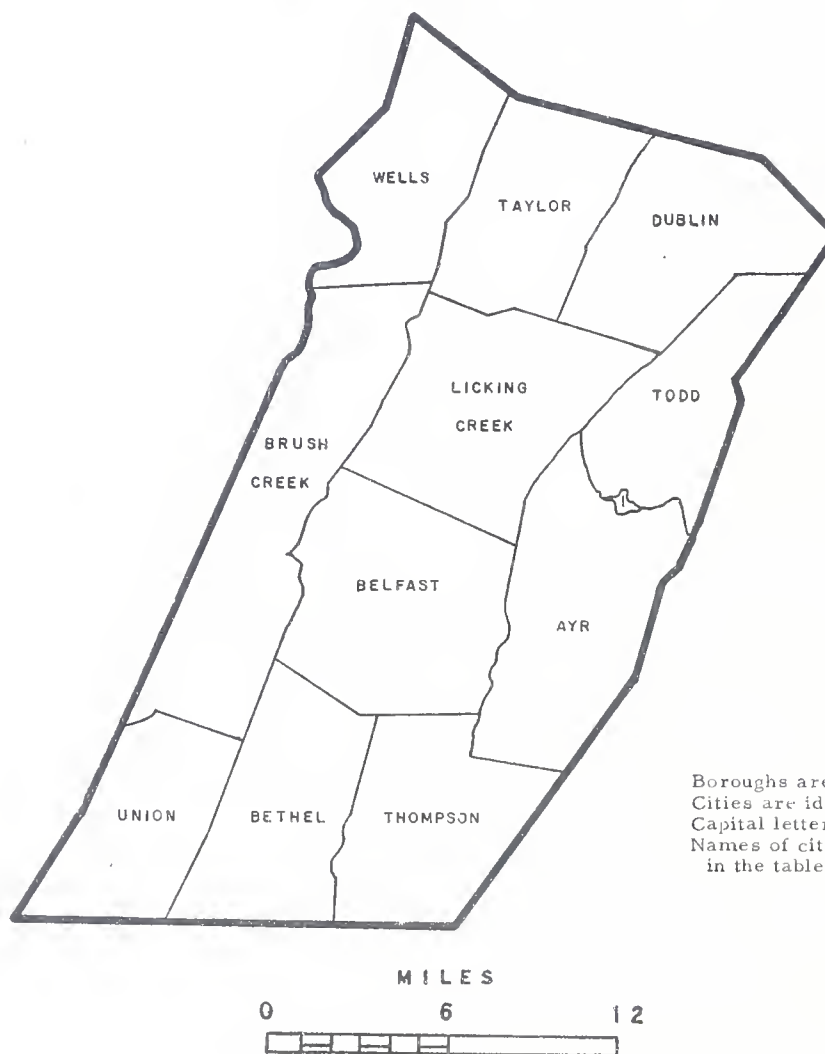
(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Quincy township and Mont Alto borough was 45.0 square miles. (b) Of the total land area in Shippensburg borough, 0.3 square miles are located in Franklin County and 0.7 square miles in Cumberland County. (c) The combined area for Southampton Township and Orrstown borough was 36.5 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 236.



# FULTON COUNTY



## KEY

Boroughs are identified by Arabic numbers.  
 Cities are identified by Roman numerals.  
 Capital letters refer to townships.  
 Names of cities and boroughs are shown  
 in the table below.

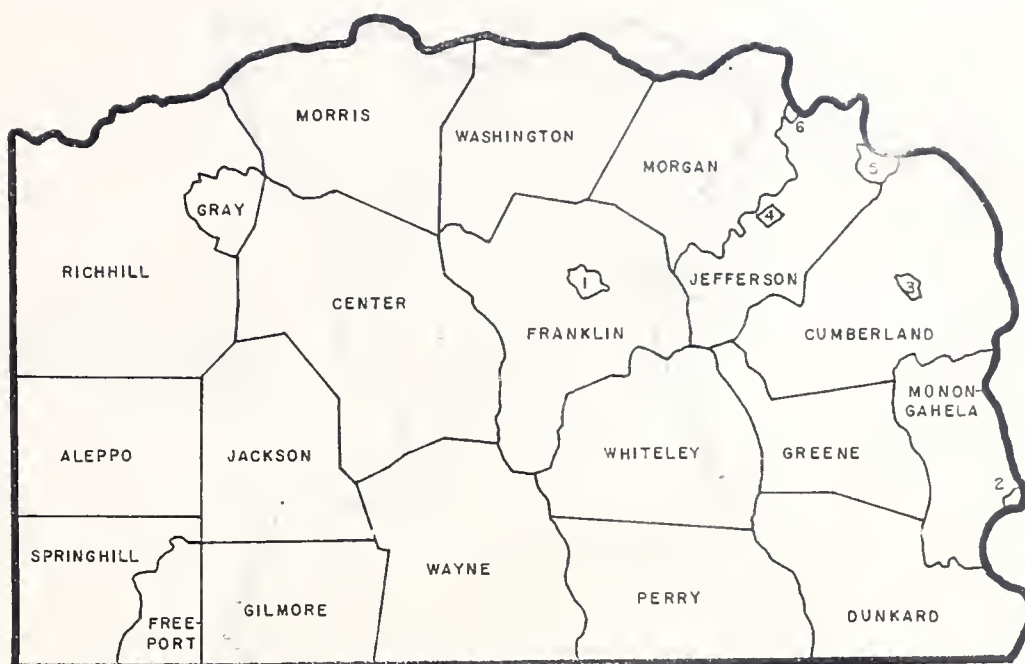
POPULATION AND AREA FOR MUNICIPALITIES IN FULTON COUNTY .

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Fulton County, total	10,387	10,597	435.2					
	Ayr	1,388	1,360	45.9	1	McConnellsburg	1,126	1,245	0.2
	Belfast	947	1,004	46.0		Taylor	1,019	991	35.5
	Bethel	953	978	37.0		Thompson	739	761	36.7
	Brush Creek	538	498	54.6		Todd	715	880	33.3
	Dublin	883	865	36.5		Union	493	484	31.5
	Licking Creek	986	987	45.2		Wells	600	544	32.8

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
 (2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 236.

# GREENE COUNTY



## KEY

Boroughs are identified by Arabic numbers.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.

POPULATION AND AREA FOR MUNICIPALITIES IN GREENE COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Greene County, total	45,394	39,424	577.6					
	Aleppo	777	740	27.6	4	Jefferson	575	442	(b)
3	Carmichaels	895	788	(a)		Jefferson	2,886	2,591	(b)
	Center	1,472	1,213	49.7		Monongahela	2,616	2,085	(c)
6	Clarksville	428	332	(d)		Morgan	3,422	2,793	29.9
	Cumberland	7,801	6,662	(a)		Morris	938	795	35.8
	Dunkard	3,753	2,661	31.2		Perry	1,722	1,499	(e)
	Franklin	3,649	4,074	39.6	5	Rices Landing	796	693	(b)
	Freeport	383	300	6.8		Richhill	1,399	1,162	56.0
	Gilmore	463	373	22.0		Springhill	584	439	22.9
	Gray	207	209	3.6		Washington	814	797	26.3
	Greene	521	491	18.9		Wayne	1,669	1,324	40.1
2	Greensboro	651	505	(c)	1	Waynesburg	5,514	5,188	0.7
	Jackson	686	579	28.5		Whiteley	773	689	32.3

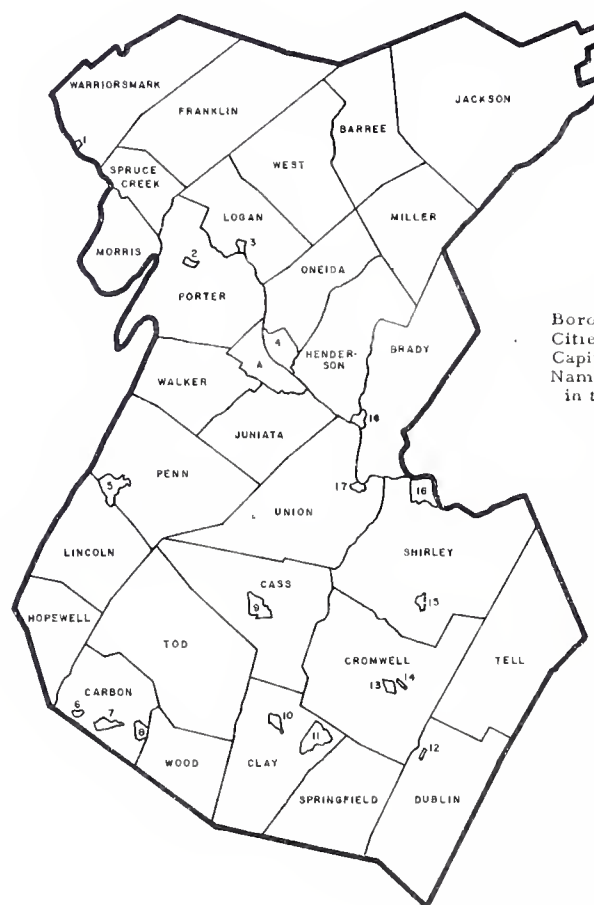
(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Cumberland township and Carmichaels borough was 39.0 square miles. (b) The combined area for Jefferson township and Jefferson and Rices Landing boroughs was 22.5 square miles. (c) The combined area for Monongahela township and Greensboro borough was 17.6 square miles. (d) The combined area for Morgan township and Clarksville borough was 26.6 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U.S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 236.

# HUNTINGDON COUNTY



## KEY

Boroughs are identified by Arabic numerals.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.



POPULATION AND AREA FOR MUNICIPALITIES IN HUNTINGDON COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Huntingdon County, total	40,872	39,457	895.1					
2	Alexandria	443	381	(i)		Miller	207	228	22.3
	Barree	279	261	24.3		Morris	326	308	14.1
1	Birmingham	178	136	(l)	16	Mount Union	4,690	4,091	1.2
	Brady	659	672	(a)		Oneida	927	1,235	20.3
8	Broad Top City	483	334	(b)	14	Orbisonia	648	643	(e)
	Carbon	541	419	(b)		Penn	706	723	(h)
	Cass	663	649	(c)	3	Petersburg	621	552	(g)
9	Cassville	158	208	(c)		Porter	1,146	1,231	(i)
	Clay	772	752	(d)	13	Rockhill	567	566	(e)
6	Coalmont	207	172	(b)	10	Saltillo	435	395	(d)
	Cromwell	1,032	1,004	(e)	12	Shade Gap	157	140	(f)
	Dublin	862	870	(f)		Shirley	2,049	2,009	(j)
7	Dudley	350	295	(b)	15	Shirleysburg	241	170	(j)
	Franklin	390	333	36.0	A	Smithfield	2,463	2,547	6.2
	Henderson	682	667	26.7		Springfield	502	399	28.0
	Hopewell	616	584	15.9		Spruce Creek	338	335	8.6
4	Huntingdon	7,330	7,234	1.7		Tell	689	646	37.5
	Jackson	515	516	77.6	11	Three Springs	417	475	(d)
	Juniata	298	464	20.7		Tod	838	635	44.0
	Lincoln	366	410	21.3		Union	799	830	(k)
	Logan	331	276	(g)		Walker	919	1,042	17.8
17	Mapleton	742	666	(k)		Warriorsmark	956	1,008	(l)
5	Marklesburg	219	197	(h)		West	401	375	29.0
18	Mill Creek	417	400	(a)		Wood	1,297	974	16.3

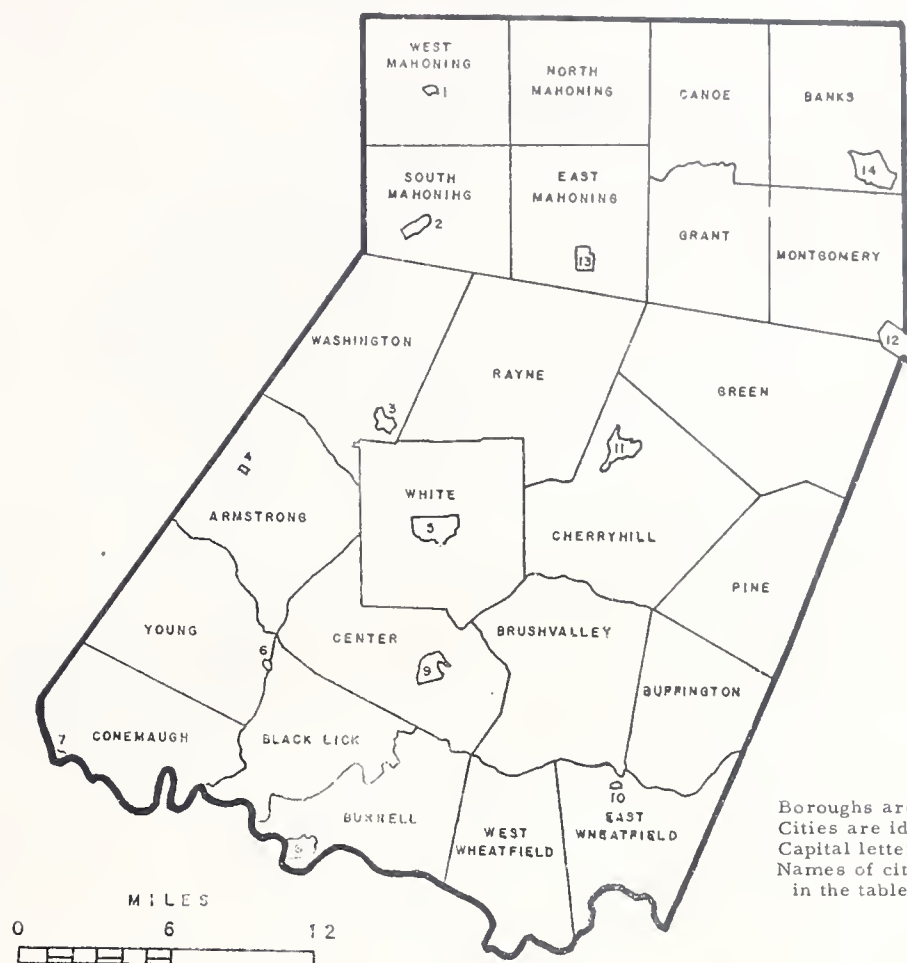
(1) As explained in the key on the map diagrams, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Brady township and Mill Creek borough was 29.9 square miles. (b) The combined area for Carbon township and Broad Top City, Coalmont and Dudley boroughs was 20.6 square miles. (c) The combined area for Cass township and Cassville borough was 33.7 square miles. (d) The combined area for Clay township and Saltillo and Three Springs boroughs was 30.7 square miles. (e) The combined area for Cromwell township and Orbisonia and Rockhill boroughs was 50.8 square miles. (f) The combined area for Dublin township and Shade Gap borough was 37.8 square miles. (g) The combined area for Logan township and Petersburg borough was 21.9 square miles. (h) The combined area for Penn township and Marklesburg borough was 37.2 square miles. (i) The combined area for Porter township and Alexandria borough was 32.5 square miles. (j) The combined area for Shirley township and Shirleysburg borough was 64.7 square miles. (k) The combined area for Union township and Mapleton borough was 36.8 square miles. (l) The combined area for Warriorsmark township and Birmingham borough was 29.0 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 235.



# INDIANA COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN INDIANA COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Indiana County, total	77,106	75,366	830.7					
10	Armagh	176	192	(d)		Green	4,759	3,908	52.1
	Armstrong	1,239	1,163	(a)	9	Homer City	2,372	2,471	0.4
	Banks	1,269	975	(b)	5	Indiana	11,743	13,005	1.8
	Black Lick	778	685	29.5	6	Jacksonville	204	180	(i)
8	Blairsville	5,000	4,930	0.9	13	Marion Center	433	407	(c)
	Brushvalley	1,364	1,319	42.9		Montgomery	1,958	1,633	(e)
	Buffington	965	928	30.7		North Mahoning	893	835	27.8
	Burrell	3,478	3,476	22.5		Pine	2,576	2,145	31.3
	Canoe	2,184	1,790	29.1	2	Plumville	452	401	(f)
	Center	6,215	5,595	40.8		Rayne	3,020	2,841	47.8
	Cherryhill	1,955	1,721	48.6	7	Saltsburg	1,156	1,054	0.3
12	Cherry Tree	517	469	(e)	4	Shelocta	105	89	(a)
11	Clymer	2,500	2,251	0.8	1	Smicksburg	92	80	(h)
	Conemaugh	2,021	2,135	34.5		South Mahoning	1,089	971	(f)
3	Creekside	525	482	(g)		Washington	1,160	1,111	(g)
	East Mahoning	776	757	(c)		West Mahoning	472	465	(h)
	East Wheatfield	2,145	2,377	(d)		West Wheatfield	1,818	2,275	31.4
14	Glen Campbell	510	400	(b)		White	5,340	6,884	42.4
	Grant	863	694	25.1		Young	2,984	2,272	(i)

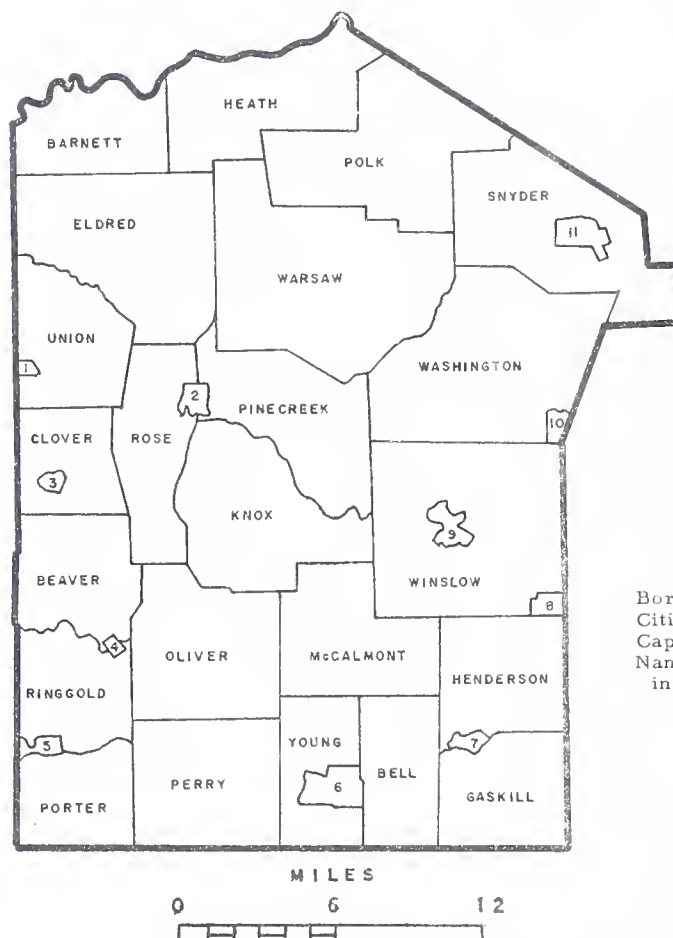
(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(a) The combined area for Armstrong township and Shelocta borough was 37.6 square miles. (b) The combined area for Banks township and Glen Campbell borough was 33.0 square miles. (c) The combined area for East Mahoning township and Marion Center borough was 31.9 square miles. (d) The combined area for East Wheatfield township and Armagh borough was 27.2 square miles. (e) The combined area for Montgomery township and Cherry Tree borough was 29.0 square miles. (f) The combined area for South Mahoning township and Plumville borough was 29.0 square miles. (g) The combined area for Washington township and Creekside borough was 37.9 square miles. (h) The combined area for West Mahoning township and Smicksburg borough was 29.5 square miles. (i) The combined area for Young township and Jacksonville borough was 34.9 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 236.

# JEFFERSON COUNTY



## KEY

Boroughs are identified by Arabic numerals. Cities are identified by Roman numerals. Capital letters refer to townships. Names of cities and boroughs are shown in the table below.

POPULATION AND AREA FOR MUNICIPALITIES IN JEFFERSON COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Jefferson County total	49,147	46,792	651.8					
	Barnett	206	175	15.8		Pinecreek	1,067	1,171	29.1
	Beaver	658	570	20.5		Polk	259	226	33.4
	Bell	1,647	1,705	18.3		Porter	483	324	17.4
7	Big Run	896	857	(b)	6	Punxsutawney	8,969	8,805	3.0
11	Brockway	2,650	2,563	1.1	9	Reynoldsville	3,569	3,158	1.4
2	Brookville	4,274	4,620	2.0		Ringgold	916	771	(c)
	Clover	536	480	16.5		Rose	1,464	1,177	20.4
1	Corsica	421	431	(d)		Snyder	1,804	1,997	38.4
	Eldred	1,079	1,031	46.0	3	Summerville	933	895	0.6
10	Falls Creek	1,135	1,259	(a)	8	Sykesville	1,652	1,479	1.6
	Gaskill	519	544	20.4	5	Timblin	327	240	(c)
	Heath	122	94	29.3		Union	611	554	(d)
	Henderson	1,521	1,177	(b)		Warsaw	911	976	51.3
	Knox	1,176	996	31.0		Washington	1,706	1,590	47.7
	McCalmont	1,305	1,052	26.1		Winslow	2,206	2,142	44.6
	Oliver	953	899	29.6	4	Worthville	73	83	(c)
	Perry	1,355	1,148	28.0		Young	1,744	1,603	15.2

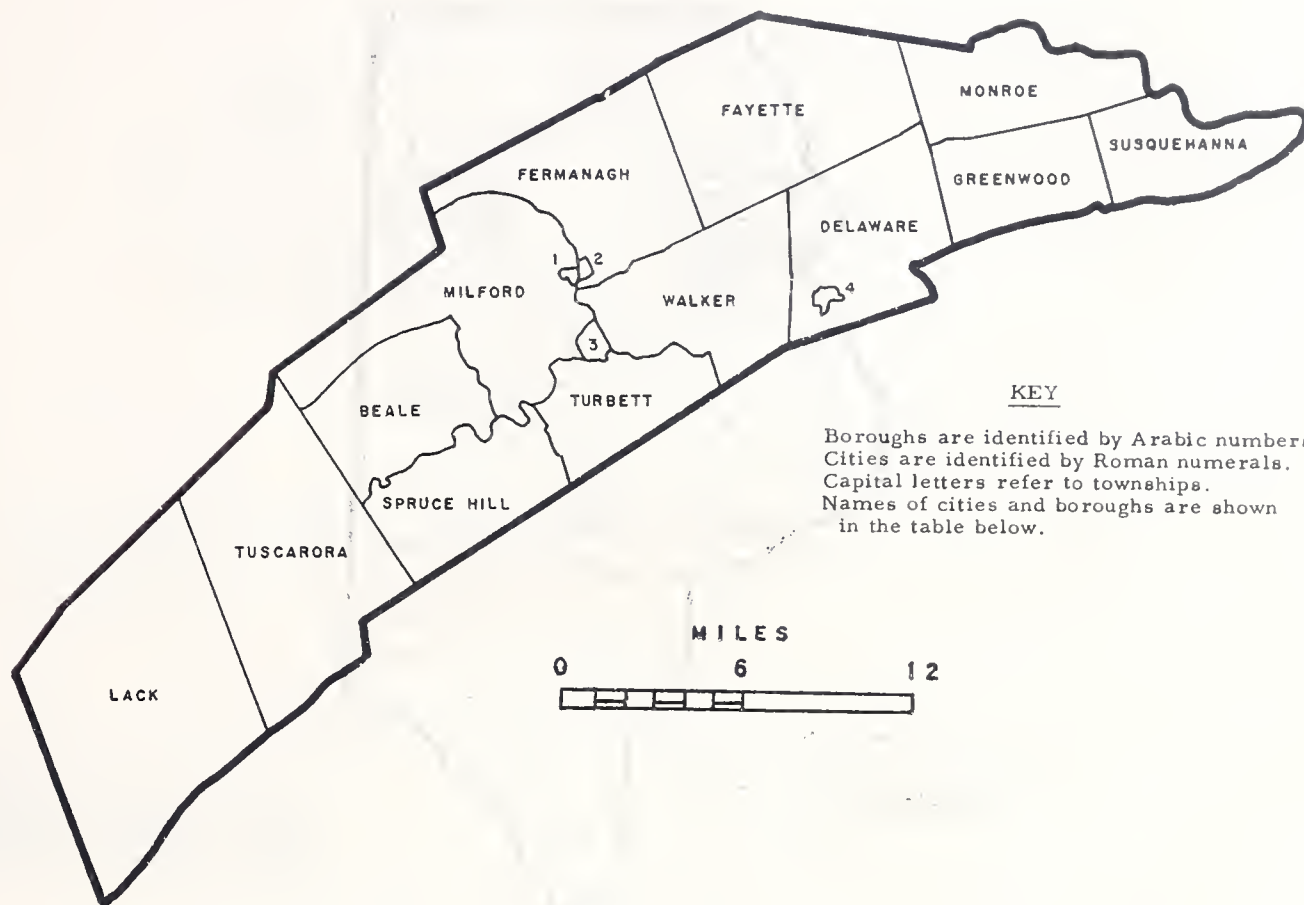
(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(a) Of the total land area in Falls Creek borough, 0.9 square miles are located in Jefferson County and 0.3 square miles in Clearfield County. (b) The combined area for Henderson township and Big Run borough was 22.8 square miles. (c) The combined area for Ringgold township and Timblin and Worthville boroughs was 21.0 square miles. (d) The combined area for Union township and Corsica borough was 18.4 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 236.

# JUNIATA COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN JUNIATA COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Juniata County, total	15,243	15,874	386.2					
	Beale	522	482	20.4					
	Delaware	995	971	(a)	3	Monroe	1,261	1,321	19.8
	Fayette	1,730	1,917	39.4		Port Royal	800	805	(b)
	Fermanagh	1,297	1,441	30.2		Spruce Hill	540	594	22.9
	Greenwood	286	353	17.3	4	Susquehanna	513	587	16.8
	Lack	798	723	63.6		Thompsontown	486	713	(a)
1	Mifflin	835	745	(b)		Turbett	576	578	16.7
2	Mifflintown	1,013	887	0.1		Tuscarora	1,027	969	47.8
	Milford	944	1,033	(b)		Walker	1,620	1,755	27.7

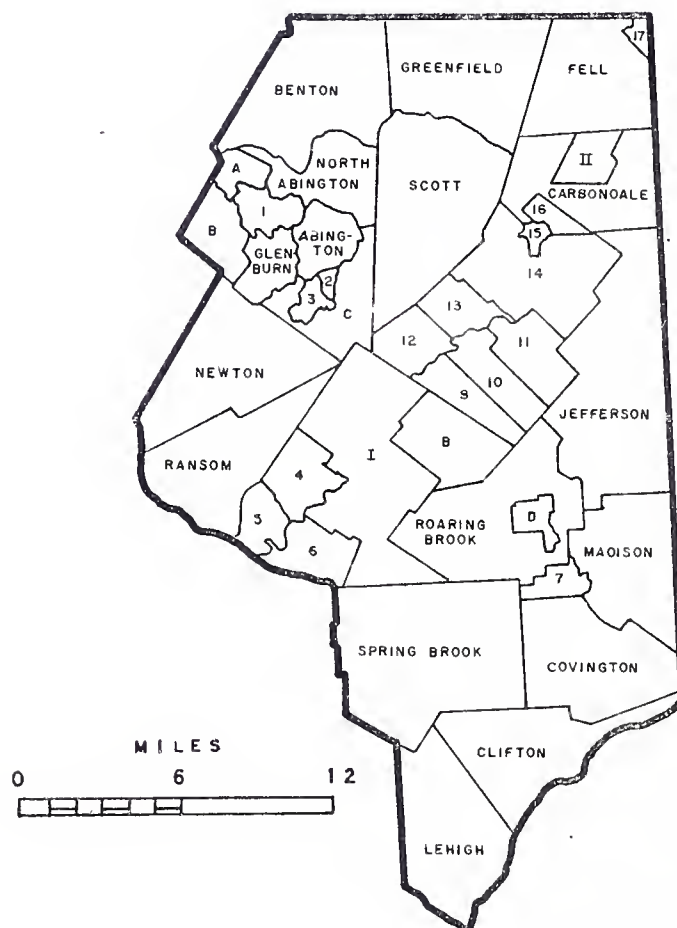
(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
 (2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Delaware township and Thompsontown borough was 26.8 square miles. (b) The combined area for Milford township and Mifflin and Port Royal boroughs was 36.7 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 236.



# LACKAWANNA COUNTY



## KEY

Boroughs are identified by Arabic numbers. Cities are identified by Roman numerals. Capital letters refer to townships. Names of cities and boroughs are shown in the table below.

## POPULATION AND AREA FOR MUNICIPALITIES IN LACKAWANNA COUNTY

(For a breakdown of areas subdivided since 1940, see Appendix A.)

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Lackawanna County, total	257,396	234,531	454.7					
	Abington	690	1,077	4.9		Lehigh	115	156	21.1
14	Archbald	6,304	5,471	16.9		Madison	780	788	16.9
	Benton	1,011	1,012	22.2	16	Mayfield	2,373	1,996	2.3
13	Blakely	6,828	6,374	3.9	6	Moosic	3,965	4,243	6.1
11	Carbondale	16,296	13,595	3.4	7	Moscow	1,050	1,212	2.7
	Carbondale	1,217	827	13.9		Newton	2,163	2,377	22.4
2	Clarks Green	824	1,256	(c)		North Abington	423	388	9.4
3	Clarks Summit	2,940	3,693	1.1	5	Old Forge	9,749	8,928	3.5
	Clifton	226	349	18.5	10	Olyphant	7,047	5,864	5.6
	Covington	925	1,107	23.7		Ransom	1,111	1,251	18.5
1	Dalton	1,109	1,227	3.3		Roaring Brook	335	576	(b)
12	Dickson City	8,948	7,738	4.8		Scott	2,413	2,747	26.5
8	Dunmore	20,305	18,917	8.5	1	Scranton City	125,536	111,443	24.7
D	Elmhurst	676	788	(b)	C	South Abington	2,241	2,449	(c)
	Fell	3,485	2,672	(a)		Spring Brook	761	1,064	36.3
	Glenburn	565	731	4.4	4	Taylor	7,176	6,148	5.4
	Greenfield	723	816	20.3	9	Throop	5,861	4,732	5.0
	Jefferson	1,044	1,195	33.2	17	Vandling	722	578	(a)
15	Jermyn	2,535	2,568	0.8	B	West Abington	230	247	5.5
A	LaPlume	414	475	2.2	11	Winton	6,280	5,456	6.3

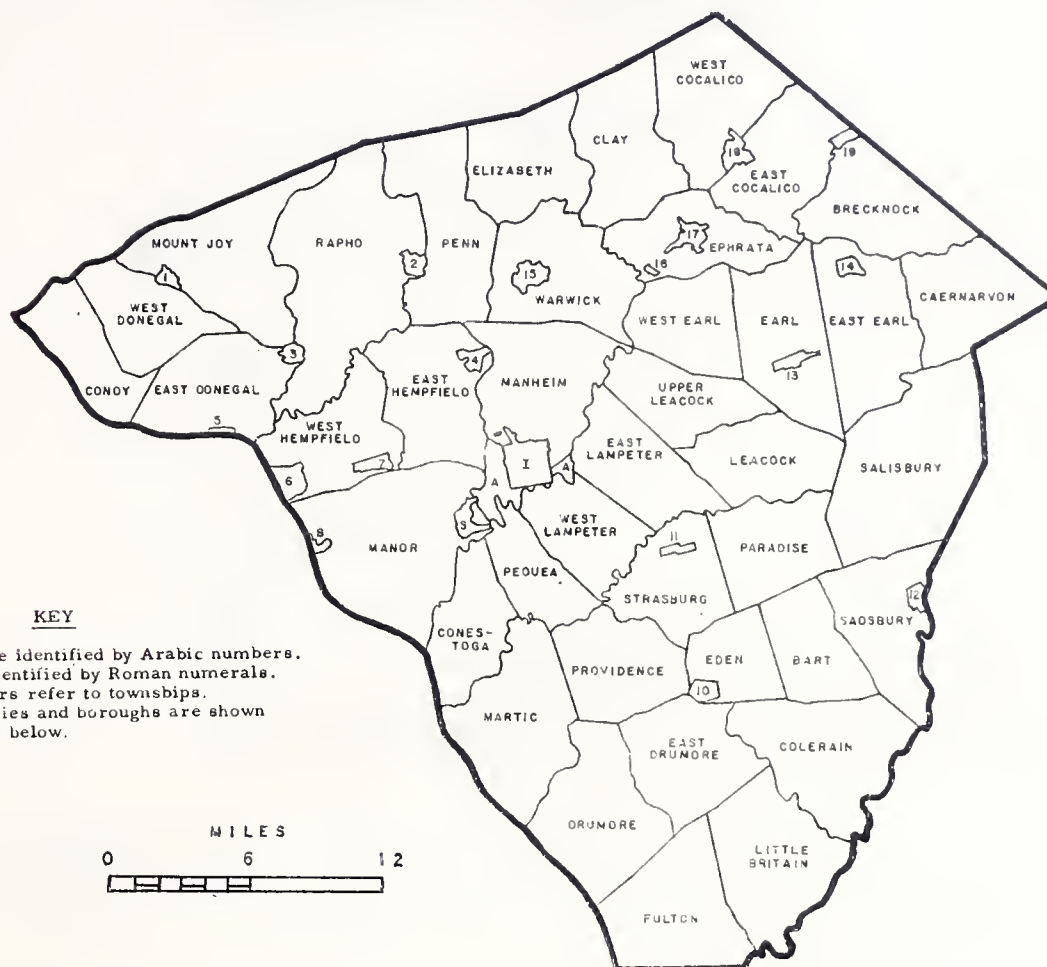
(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(a) The combined area for Fell township and Vandling borough was 16.6 square miles. (b) The combined area for Roaring Brook township and Elmhurst borough was 24.4 square miles. (c) The combined area for South Abington township and Clarks Green borough was 9.5 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, *Advance Reports*, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, *Sixth Census of the United States: 1940, Areas of the United States* 1940, p. 236.

# LANCASTER COUNTY

37



## KEY

Boroughs are identified by Arabic numerals.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.



POPULATION AND AREA FOR MUNICIPALITIES IN LANCASTER COUNTY

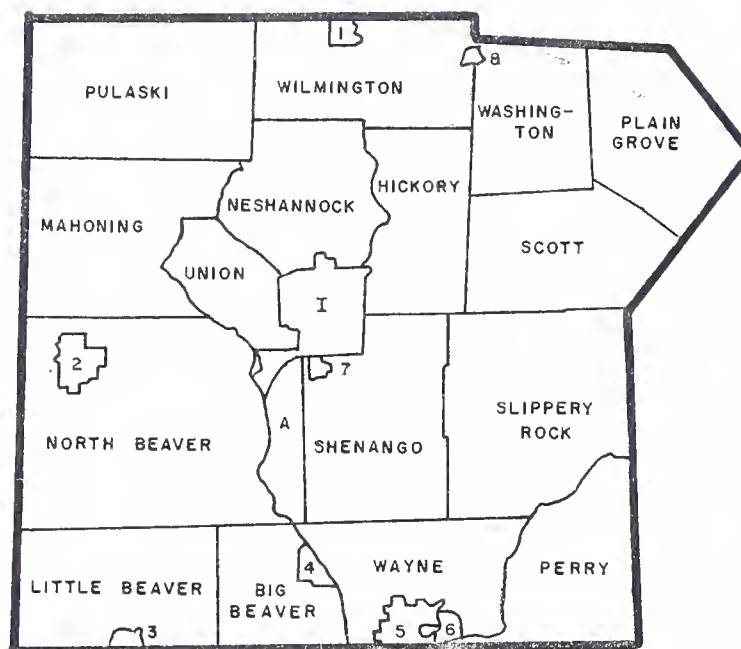
No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Lancaster County, total	234,717	278,359	945.0					
19	Adamstown	1,000	1,174	(a)		Little Britain	1,293	1,449	27.6
16	Akron	1,028	2,167	(c)	2	Manheim	4,246	4,790	0.6
	Bart	1,354	1,543	16.8		Manheim	9,289	14,855	25.3
	Brecknock	2,226	2,981	24.9		Manor	4,461	6,939	(d)
	Caernarvon	1,673	1,843	22.5	5	Marietta	2,442	2,385	0.6
12	Christiana	1,043	1,069	0.6		Martic	2,350	2,485	28.8
	Clay	1,793	2,006	22.7	9	Millersville	2,551	3,883	0.7
	Colerain	1,098	1,503	29.2	3	Mount Joy	3,006	3,292	1.0
6	Columbia	11,993	12,075	1.5		Mount Joy	3,086	4,135	29.2
	Conestoga	2,007	2,230	14.5	7	Mountville	1,064	1,411	(e)
	Conoy	1,742	1,867	14.4	13	New Holland	2,602	3,425	1.0
18	Denver	1,658	1,875	0.3		Paradise	2,731	3,280	18.7
	Drumore	1,129	1,192	25.5		Penn	2,734	3,072	29.4
	Earl	3,232	3,668	22.9		Pequea	1,704	2,435	13.8
	East Cocalico	3,044	3,791	(a)		Providence	1,888	2,288	19.6
	East Donegal	3,459	4,104	22.6	10	Quarryville	1,187	1,427	0.1
	East Drumore	1,124	1,406	22.7		Rapho	3,865	4,484	48.4
	East Earl	3,235	3,723	(b)		Sadsbury	923	1,276	19.7
	East Hempfield	4,322	8,417	21.2		Salisbury	3,932	4,509	42.8
	East Lampeter	5,166	7,399	20.8	11	Strasburg	1,109	1,416	0.6
4	East Petersburg	1,268	2,053	1.0		Strasburg	1,890	2,081	20.0
	Eden	650	745	13.5	14	Terre Hill	1,000	1,129	(b)
	Elizabeth	1,164	1,555	18.1		Upper Leacock	3,403	4,549	17.3
1	Elizabethtown	5,083	6,780	1.4		Warwick	3,273	4,716	21.6
17	Ephrata	7,027	7,688	0.8	8	Washington	483	450	(d)
	Ephrata	3,649	4,321	(c)		West Cocalico	2,947	3,608	27.9
	Fulton	1,323	1,586	25.4		West Donegal	2,335	3,392	15.7
1	Lancaster City	63,774	61,055	3.9		West Earl	2,957	3,496	17.9
A	Lancaster	6,859	10,020	6.8		West Hempfield	3,578	5,318	(e)
	Leacock	2,578	3,041	21.2		West Lampeter	4,119	5,520	16.8
15	Lititz	5,568	5,987	0.9					

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Adamstown borough and East Cocalico township was 22.3 square miles. (b) The combined area for East Earl township and Terre Hill borough was 24.0 square miles. (c) The combined area for Ephrata township and Akron borough was 19.9 square miles. (d) The combined area for Manor township and Washington borough was 39.7 square miles. (e) The combined area for West Hempfield township and Mountville borough was 17.9 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 237.

# LAWRENCE COUNTY



MILES



## KEY

Boroughs are identified by Arabic numerals.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.

POPULATION AND AREA FOR MUNICIPALITIES IN LAWRENCE COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Lawrence County, total	105,120	112,965	365.9					
2	Bessemer	1,461	1,491	1.5		Plain Grove	762	686	18.2
	Big Beaver	1,094	1,338	15.2		Pulaski	2,367	3,066	30.4
6	Ellport	1,122	1,458	(d)		Scott	1,118	1,311	19.8
5	Ellwood City	11,644	11,310	(a)		Shenango	5,540	7,516	(c)
3	Enon Valley	392	455	(b)		Slippery Rock	1,828	2,198	31.1
	Hickory	1,738	2,165	16.4	7	South New Castle	993	955	(c)
	Little Beaver	689	808	(b)	A	Taylor	1,228	1,402	5.4
	Mahoning	3,180	3,396	25.3		Union	4,876	7,161	9.4
	Neshannock	4,061	7,421	17.6	8	Volant	229	213	(e)
	New Castle	48,834	44,790	8.2	4	Wampum	1,090	1,085	0.2
1	New Wilmington	1,948	2,203	0.7		Washington	563	576	17.2
	North Beaver	2,653	3,248	44.3		Wayne	2,925	3,205	(d)
	Perry	1,401	1,737	19.1		Wilmington	1,384	1,771	(e)

(1) As explained in the key on the map diagrams, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

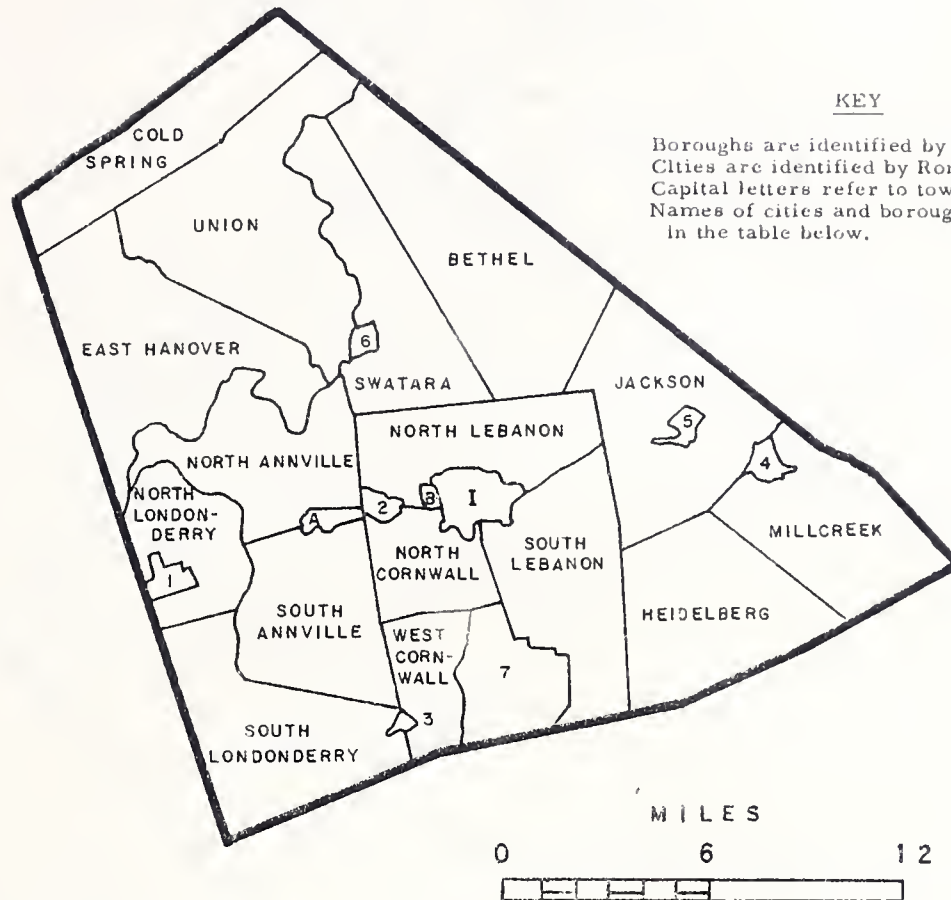
(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(a) Of the total land area in Ellwood City, 1.9 square miles are located in Lawrence County, and 0.2 square miles in Beaver County. (b) The combined area for Little Beaver township and Enon Valley borough was 20.9 square miles. (c) The combined area for Shenango township and South New Castle borough was 25.5 square miles. (d) The combined area for Wayne township and Ellport borough was 17.1 square miles. (e) The combined area for Wilmington township and Volant borough was 20.5 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 237.



# LEBANON COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN LEBANON COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Lebanon County, total	81,683	90,853	362.3					
A	Annville	3,699	4,264	1.7		North Annville	1,517	1,813	18.1
	Bethel	2,302	2,133	35.1		North Cornwall	2,088	2,624	9.7
2	Cleona	1,483	1,988	1.0		North Lebanon	3,436	4,713	16.2
	Cold Spring	67	71	20.4		North Londonderry	961	1,684	11.1
	Cornwall	1,760	1,934	9.7	1	Palmyra	5,910	6,999	1.4
	East Hanover	1,842	2,140	33.9	4	Richland	1,090	1,276	(a)
	Heidelberg	2,446	2,597	24.4		South Annville	1,104	1,214	19.3
	Jackson	2,244	2,778	23.7		South Lebanon	4,488	6,584	21.2
6	Jonestown	853	813	(c)		South Londonderry	2,146	2,911	(b)
1	Lebanon	(3)30,934	30,045	4.2		Swatara	1,953	2,164	(c)
	Millcreek	2,442	2,406	(a)		Union	1,787	1,967	33.7
3	Mount Gretna	83	93	(b)		West Cornwall	948	1,020	8.6
5	Myerstown	3,050	3,268	1.0	B	West Lebanon	1,050	1,054	0.5

(1) As explained in the key on the map diagrams, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

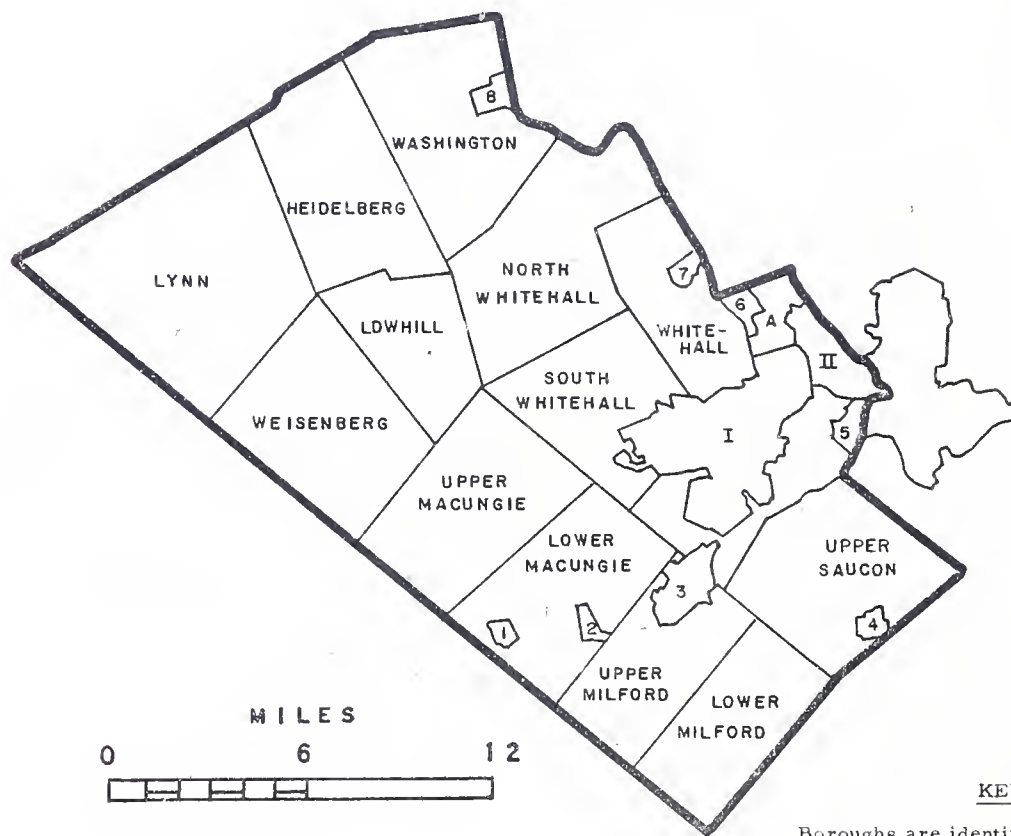
(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(3) In 1950, Lebanon Independent borough had a population of 2,778 and land area of 0.9 square mile. They are now combined in figures for Lebanon City.

(a) The combined area for Millcreek township and Richland borough was 21.2 square miles. (b) The combined area for South Londonderry township and Mount Gretna borough was 25.1 square miles. (c) The combined area for Swatara township and Jonestown borough was 21.1 square miles.

Source: U.S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 237.

# LEHIGH COUNTY



## KEY

Boroughs are identified by Arabic numbers. Cities are identified by Roman numerals. Capital letters refer to townships. Names of cities and boroughs are shown in the table below.

POPULATION AND AREA FOR MUNICIPALITIES IN LEHIGH COUNTY

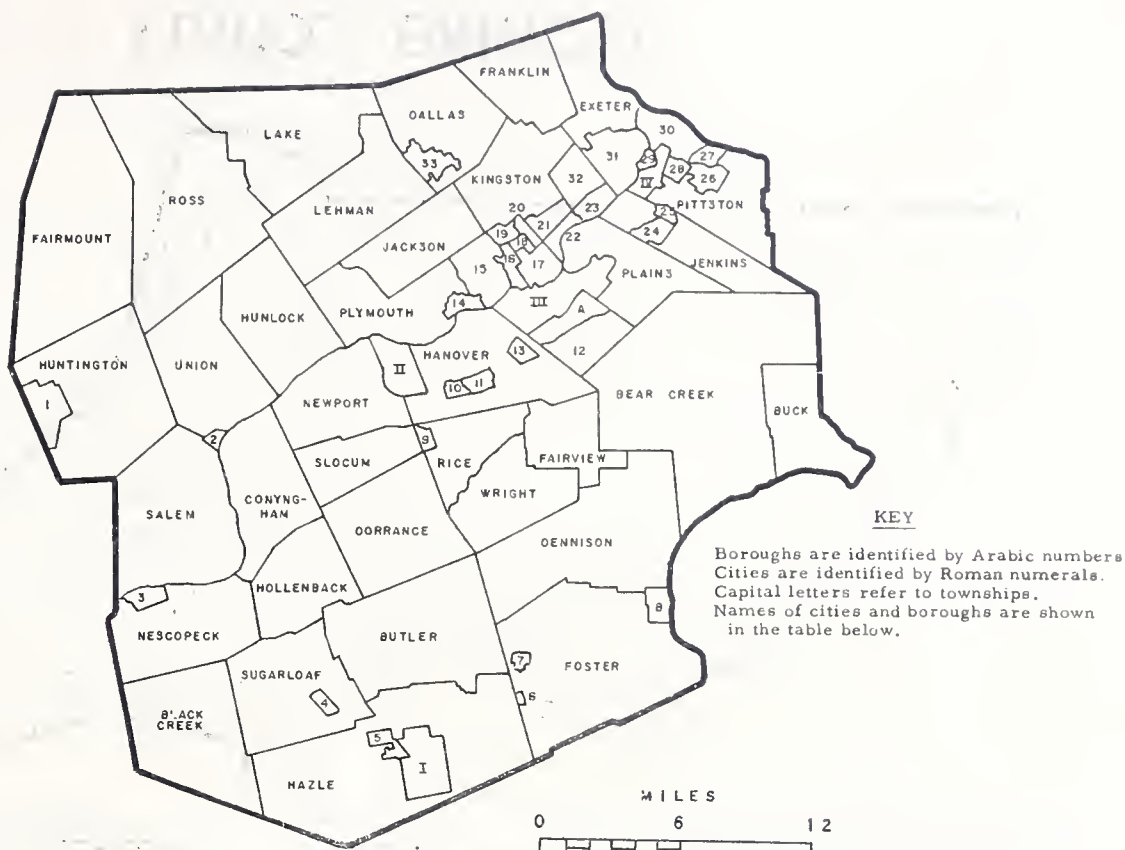
No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Lehigh County, total	198,207	227,536	347.6					
1	Alburtis	979	1,086	(b)		Lynn	1,875	1,908	42.6
I	Allentown	106,756	108,347	15.7	2	Macungie	983	1,266	(b)
II	Bethlehem	13,804	20,083	(a)		North Whitehall	4,337	5,061	27.6
6	Catasauqua	4,923	5,062	1.2		Salisbury	4,583	7,294	11.9
4	Coopersburg	1,462	1,800	0.7	8	Slatington	4,343	4,316	0.8
7	Coplay	2,994	3,701	0.7		South Whitehall	5,604	10,932	18.8
3	Emmaus	7,780	10,262	2.6		Upper Macungie	3,148	3,605	25.0
5	Fountain Hill	5,456	5,428	0.7		Upper Milford	2,834	3,614	17.6
A	Hanover	588	1,083	4.5		Upper Saucon	4,240	5,926	24.7
	Heidelberg	1,169	1,281	23.7		Washington	2,883	3,199	25.4
	Lower Macungie	2,997	3,859	(b)		Weisenberg	1,248	1,398	27.6
	Lower Milford	1,390	1,779	19.7		Whitehall	11,269	14,528	12.7
	Lowhill	562	718	14.7					

(1) As explained in the key on the map diagrams, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(a) Of the total land area in Bethlehem, 4.3 square miles are located in Lehigh County and 13.2 square miles in Northampton County. (b) The combined area of Lower Macungie township and Alburtis and Macungie boroughs was 24.4 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 237.

# LUZERNE COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN LUZERNE COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
Luzerne County, total		392, 241	346, 972	889.8					
13	Ashley	5, 243	4, 258	1.1		Lake	1, 693	1, 895	30.9
27	Avoca	4, 040	3, 562	1.0	15	Larksville	6, 360	4, 390	3.9
	Bear Creek	1, 047	1, 684	81.5	12	Laurel Run	858	855	6.7
	Black Creek	2, 116	1, 554	3.7		Lehman	1, 720	2, 318	23.5
	Buck	220	256	18.4	20	Luzerne	6, 176	5, 118	0.7
	Butler	2, 978	3, 094	33.7	11	Nanticoke	20, 160	15, 601	2.6
4	Conyngham	935	1, 163	(e)	3	Nescopeck	1, 907	1, 934	0.9
	Conyngham	2, 274	1, 819	16.3		Nescopeck	694	640	18.5
19	Courtdale	982	845	0.8	1	New Columbus	152	144	(b)
33	Dallas	1, 674	2, 586	2.3		Newport	9, 347	7, 083	15.0
	Dallas	3, 181	4, 053	19.1	9	Nuangola	295	346	(d)
	Dennison	557	252	36.9	1V	Pittston	15, 012	12, 407	1.7
	Dorrance	969	983	26.7		Pittston	3, 241	2, 992	13.4
26	Dupont	4, 107	3, 669	1.5		Plains	12, 541	10, 995	16.0
30	Duryea	6, 655	5, 626	5.3	14	Plymouth	13, 021	10, 401	1.1
16	Edwardsville	6, 686	5, 711	1.2		Plymouth	3, 446	2, 783	16.2
31	Exeter	5, 130	4, 747	4.8	18	Pringle	1, 727	1, 418	0.4
	Exeter	1, 318	1, 309	12.3		Rice	612	642	(d)
	Fairmount	834	819	44.8		Ross	1, 283	1, 360	43.7
	Fairview	1, 210	2, 061	10.3		Salem	2, 859	3, 124	28.7
22	Forty Fort	6, 173	6, 431	1.4	2	Shickshinny	2, 156	1, 843	0.5
	Foster	3, 575	2, 683	(a)		Slocum	837	796	10.1
	Franklin	788	880	12.6	11	Sugarloaf	1, 637	1, 850	(e)
7	Freeland	5, 909	5, 068	1.0	21	Sugar Notch	2, 002	1, 524	0.9
	Hanover	15, 051	12, 781	20.1		Swoyersville	7, 795	6, 751	1.7
	Hazle	9, 279	7, 478	44.5		Union	1, 278	768	20.1
1	Hazleton	35, 491	32, 056	6.0	10	Warrior Run	1, 056	833	0.4
	Hollenback	566	626	15.4	5	West Hazleton	6, 988	6, 278	0.8
28	Hughestown	1, 888	1, 615	0.7	29	West Pittston	7, 230	6, 998	0.8
	Hunlock	1, 799	2, 057	20.7	32	West Wyoming	2, 863	3, 166	3.8
	Huntington	1, 497	1, 355	(b)	8	White Haven	1, 461	1, 778	1.0
	Jackson	1, 206	1, 364	12.8	(11)	Wilkes-Barre	76, 826	63, 551	6.9
6	Jeddo	262	183	(a)	A	Wilkes-Barre	5, 267	4, 319	2.8
	Jenkins	4, 241	3, 475	(c)		Wright	948	1, 423	15.1
17	Kingston	21, 096	20, 261	2.2	23	Wyoming	4, 511	4, 127	1.2
24	Kingston	4, 482	5, 450	15.0	25	Yatesville	565	472	(c)
	Lafin	258	235	(c)					

(1) As explained in the key on the map diagrams, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

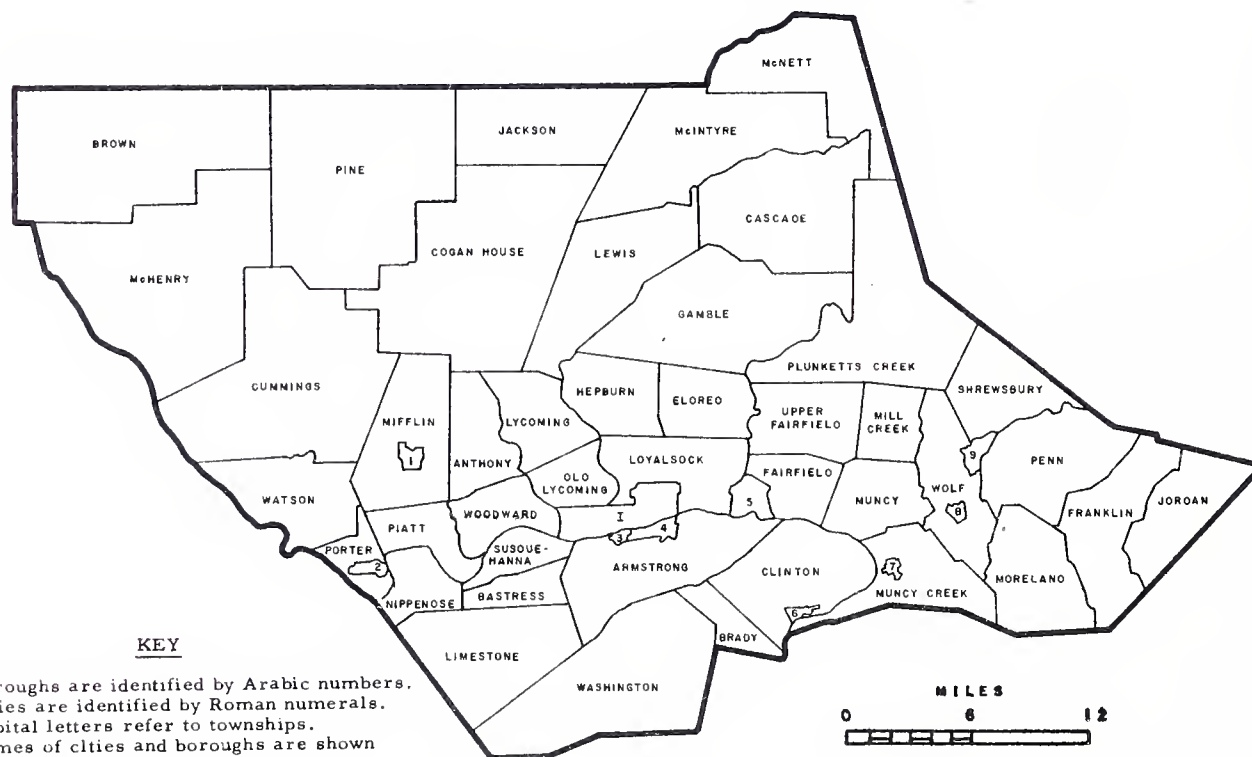
(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(a) The combined area for Foster township and Jeddo borough was 45.1 square miles. (b) The combined area for Huntington township and New Columbus borough was 31.9 square miles. (c) The combined area for Jenkins township and Lafin and Yatesville boroughs was 16.3 square miles. (d) The combined area for Rice township and Nuangola borough was 10.7 square miles. (e) The combined area for Sugarloaf township and Conyngham borough was 21.7 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 237.



# LYCOMING COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN LYCOMING COUNTY

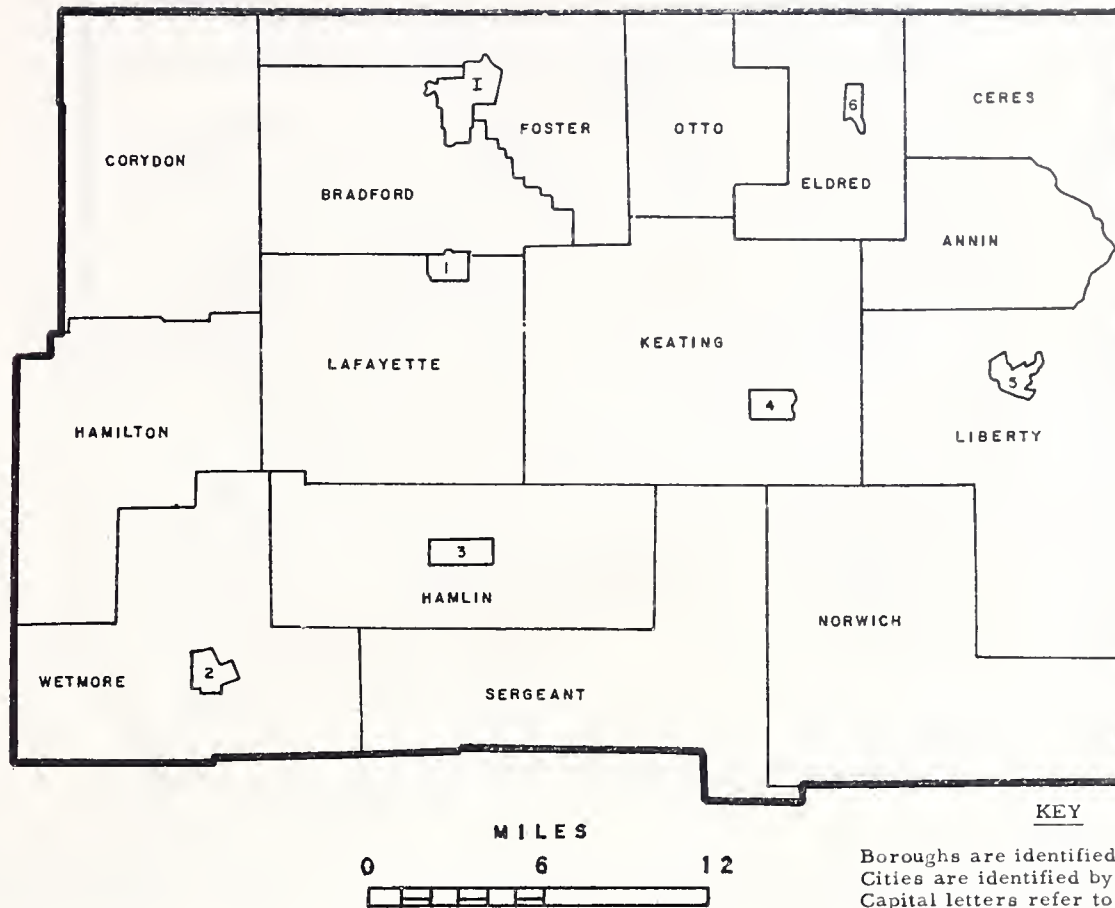
No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Lycoming County, total	101,249	109,367	1,215.9					
	Anthony	433	445	15.4		Mifflin	492	513	(a)
	Armstrong	553	606	27.3		Mill Creek	231	225	12.0
	Bastress	275	321	8.2	6	Montgomery	2,166	2,150	0.1
	Brady	192	431	8.5	5	Montoursville	3,293	5,211	4.9
	Brown	153	96	69.4		Moreland	570	576	23.8
	Cascade	185	168	39.9	7	Muncy	2,756	2,830	0.7
	Clinton	1,917	1,976	26.3		Muncy	819	907	14.9
	Cogan House	610	633	71.4		Muncy Creek	1,646	2,070	20.5
	Cummings	160	148	70.2		Nippenose	497	540	9.9
3	Duboistown	1,140	1,358	0.6		Old Lycoming	2,988	3,996	9.5
	Eldred	639	701	14.7		Penn	507	546	26.7
	Fairfield	466	869	10.1		Piatt	539	689	10.6
	Franklin	653	681	24.3	9	Picture Rocks	569	594	(b)
	Gamble	367	394	46.4		Pine	336	272	75.7
	Hepburn	849	1,315	16.3		Plunketts Creek	427	592	50.0
8	Hughesville	2,095	2,218	0.6		Porter	1,162	1,234	7.5
	Jackson	286	310	33.1	1	Salladasburg	250	255	(a)
2	Jersey Shore	5,595	5,613	1.2		Shrewsbury	331	347	20.1
	Jordan	573	606	19.6	4	South Williamsport	6,364	6,972	1.8
	Lewis	688	752	34.4		Susquehanna	569	803	7.1
	Limestone	988	944	34.0		Upper Fairfield	611	873	18.3
	Loyalsock	5,535	9,047	20.3		Washington	702	728	51.1
	Lycoming	720	1,196	15.6		Watson	239	226	23.4
	McHenry	227	147	73.2	1	Williamsport	45,047	41,967	8.8
	McIntyre	649	529	44.7		Wolf	727	957	(b)
	McNett	241	207	32.3		Woodward	1,222	1,583	12.7

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
 (2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Mifflin township and Salladasburg borough was 28.0 square miles. (b) The combined area of Wolf township and Picture Rocks borough was 19.8 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, pp. 237 and 238.

# McKEAN COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN MC KEAN COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	McKean County, total	56,607	54,517	997.0					
1	Annin	659	682	37.5		Keating	3,296	3,213	98.9
	Bradford	17,354	15,061	2.7		Lafayette	957	857	(a)
	Bradford	4,535	5,314	56.0	1	Lewis Run	694	714	(a)
	Ceres	851	868	44.7		Liberty	1,559	1,627	89.5
	Corydon	169	165	70.0	3	Mount Jewett	1,415	1,226	2.0
6	Eldred	1,199	1,107	1.3		Norwich	732	708	102.6
	Eldred	1,665	1,648	38.8		Otto	2,285	1,997	34.2
	Foster	4,890	5,603	46.5	5	Port Allegany	2,519	2,742	1.2
	Hamilton	896	734	72.6		Sergeant	424	295	81.1
	Hamlin	1,145	1,022	67.0	4	Smethport	1,797	1,725	1.6
2	Kane	5,706	5,380	1.7		Wetmore	1,860	1,829	76.3

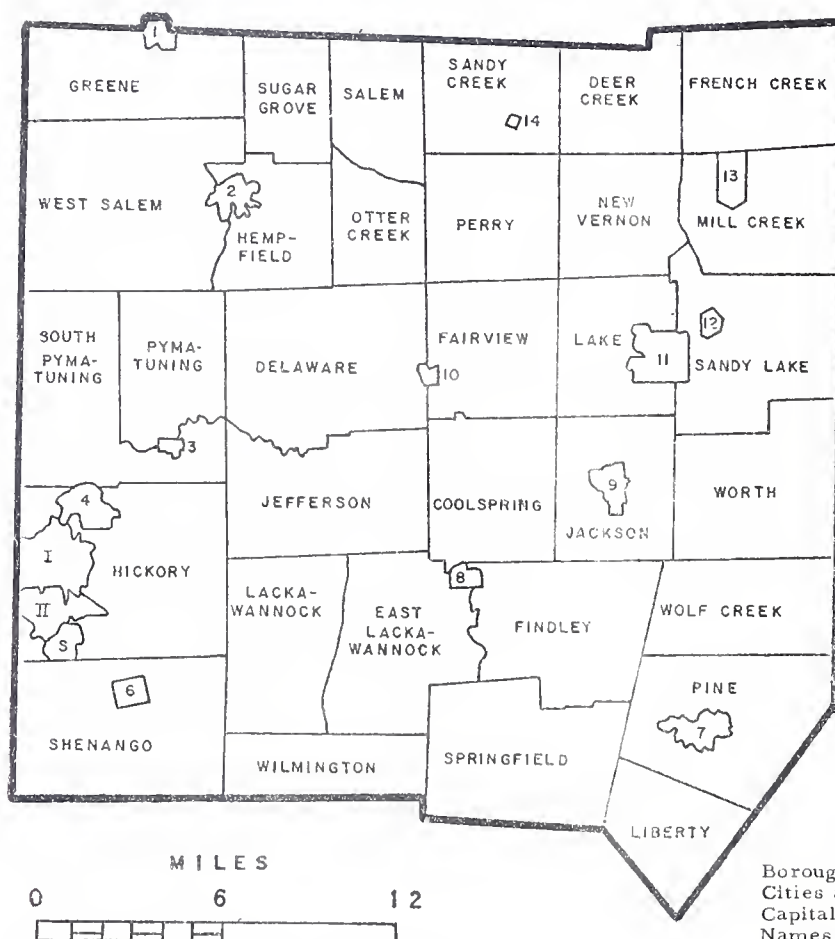
(1) As explained in the key in the map diagrams, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(a) The combined area of Lafayette township and Lewis Run borough was 70.8 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 238.

# MERCER COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN MERCER COUNTY

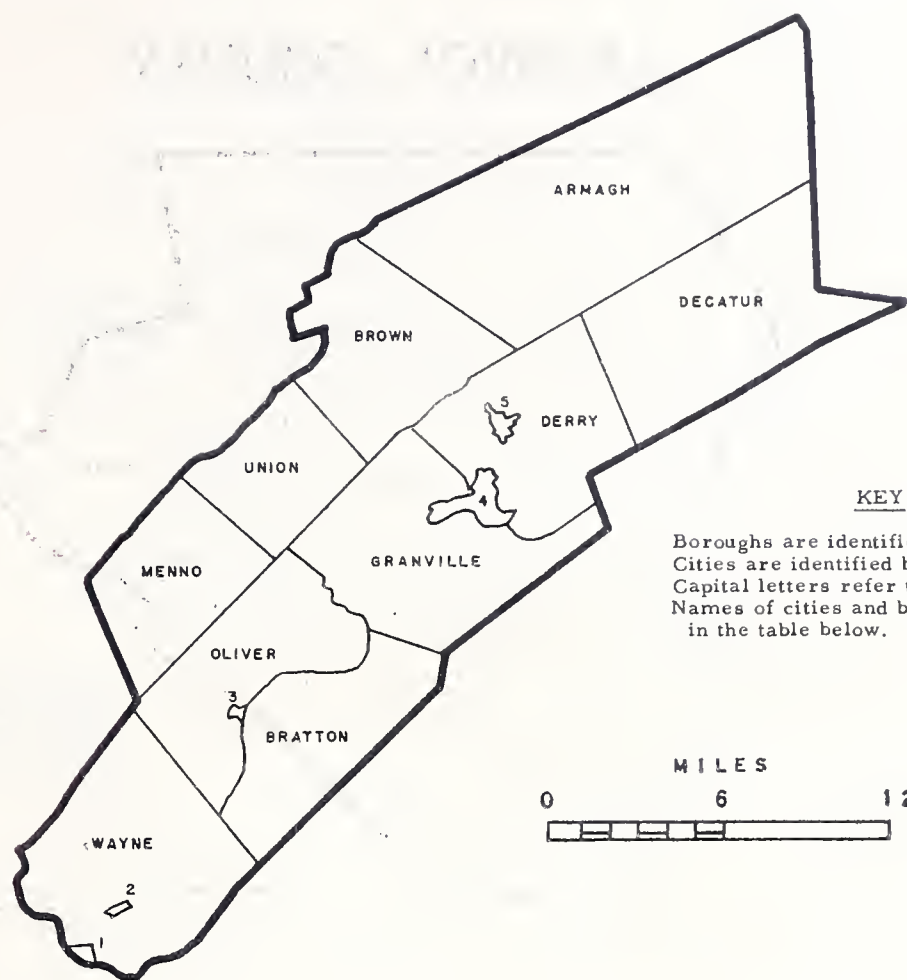
No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Mercer County, total	111,954	127,519	680.6					
3	Clarksville	345	312	(g)	12	New Lebanon	179	166	(d)
	Coolspring	1,112	1,319	19.8		New Vernon	434	418	15.5
	Deer Creek	388	396	14.8		Otter Creek	445	540	11.8
	Delaware	1,401	1,722	33.0		Perry	1,003	1,181	18.0
	East Lackawannock	906	1,179	21.6		Pine	2,643	3,432	24.3
	Fairview	753	865	(a)		Pymatuning	1,741	2,579	17.6
II	Farrell	13,644	13,793	2.1		Salem	498	595	13.5
	Findley	1,293	1,429	23.4		Sandy Creek	651	709	(e)
10	Fredonia	588	657	(a)	12	Sandy Lake	767	838	(f)
	French Creek	575	587	20.8		Sandy Lake	749	812	(f)
	Greene	758	980	(b)	1	Sharon	26,454	25,267	3.6
2	Greenville	9,210	8,765	1.5	4	Sharpsville	5,414	6,061	1.3
7	Grove City	7,411	8,368	1.6	14	Sheakleyville	141	138	(e)
	Hempfield	2,152	3,133	14.7		Shenango	1,923	3,140	30.6
	Hickory	6,725	12,635	29.4		South Pymatuning	2,475	3,464	(g)
	Jackson	751	416	(c)		Springfield	1,757	1,880	26.8
9	Jackson Center	266	640	(c)	11	Stoneboro	1,294	1,267	3.0
1	Jamestown	931	897	(b)		Sugar Grove	760	1,007	12.4
	Jefferson	1,203	1,479	25.1	6	West Middlesex	1,217	1,301	0.8
	Lackawannock	1,099	1,411	20.3		West Salem	2,653	3,373	36.5
	Lake	580	581	15.5	5	Wheatland	1,402	1,813	1.1
	Liberty	576	708	15.2		Wilmington	512	715	13.5
	Mercer	2,397	2,800	1.0		Wolf Creek	495	451	16.3
	Mill Creek	481	521	(d)		Worth	802	779	25.0

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
 (2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Fairview township and Fredonia borough was 19.4 square miles. (b) The combined area for Greene township and Jamestown borough was 22.7 square miles. (c) The combined area for Jackson township and Jackson Center borough was 18.3 square miles. (d) The combined area for Mill Creek township and New Lebanon borough was 20.7 square miles. (e) The combined area for Sandy Creek township and Sheakleyville borough was 16.3 square miles. (f) The combined area for Sandy Lake township and Sandy Lake borough was 26.0 square miles. (g) The combined area for South Pymatuning township and Clarksville borough was 25.8 square miles.



# MIFFLIN COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN MIFFLIN COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Mifflin County, total	43,691	44,348	430.9					
	Armagh	2,953	3,179	89.1	4	Lewistown	13,894	12,640	1.7
	Bratton	1,243	1,127	32.9	3	McVeytown	546	488	(a)
	Brown	2,341	2,631	35.1		Menno	1,013	1,147	24.4
5	Burnham	2,954	2,755	1.4	2	Newton Hamilton	397	338	(b)
	Decatur	1,599	1,868	50.7		Oliver	1,202	1,427	(a)
	Derry	6,675	7,167	34.3		Union	2,280	2,645	26.7
	Granville	4,635	4,908	46.4		Wayne	1,491	1,637	(b)
1	Kistler	468	391	(b)					

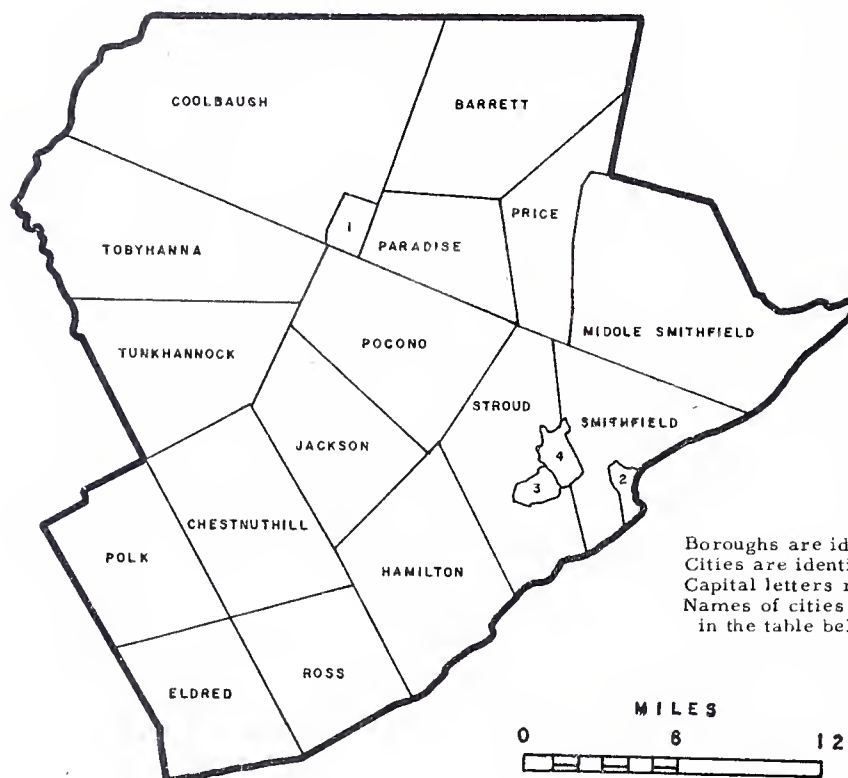
(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Oliver township and McVeytown borough was 36.9 square miles. (b) The combined area for Wayne township and Kistler and Newton Hamilton boroughs was 51.3 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 238.

# MONROE COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN MONROE COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Monroe County, total	33,773	39,567	611.3					
	Barrett	2,190	2,395	51.4		Paradise	745	982	21.3
	Chestnuthill	1,234	1,572	36.2		Pocono	1,434	1,474	34.9
	Coolbaugh	820	1,912	(a)		Polk	1,078	1,070	29.5
2	Delaware Water Gap	734	554	(b)		Price	148	258	23.3
4	East Stroudsburg	7,274	7,674	2.5		Ross	731	808	24.1
	Eldred	939	920	27.5		Smithfield	1,423	1,887	(b)
	Hamilton	1,844	2,405	40.7		Stroud	3,509	5,452	31.9
	Jackson	647	878	28.6	3	Stroudsburg	6,361	6,070	1.7
	Middle Smithfield	816	1,034	53.1		Tobyhanna	978	1,073	50.9
1	Mount Pocono	619	935	(a)		Tunkhannock	249	214	37.6

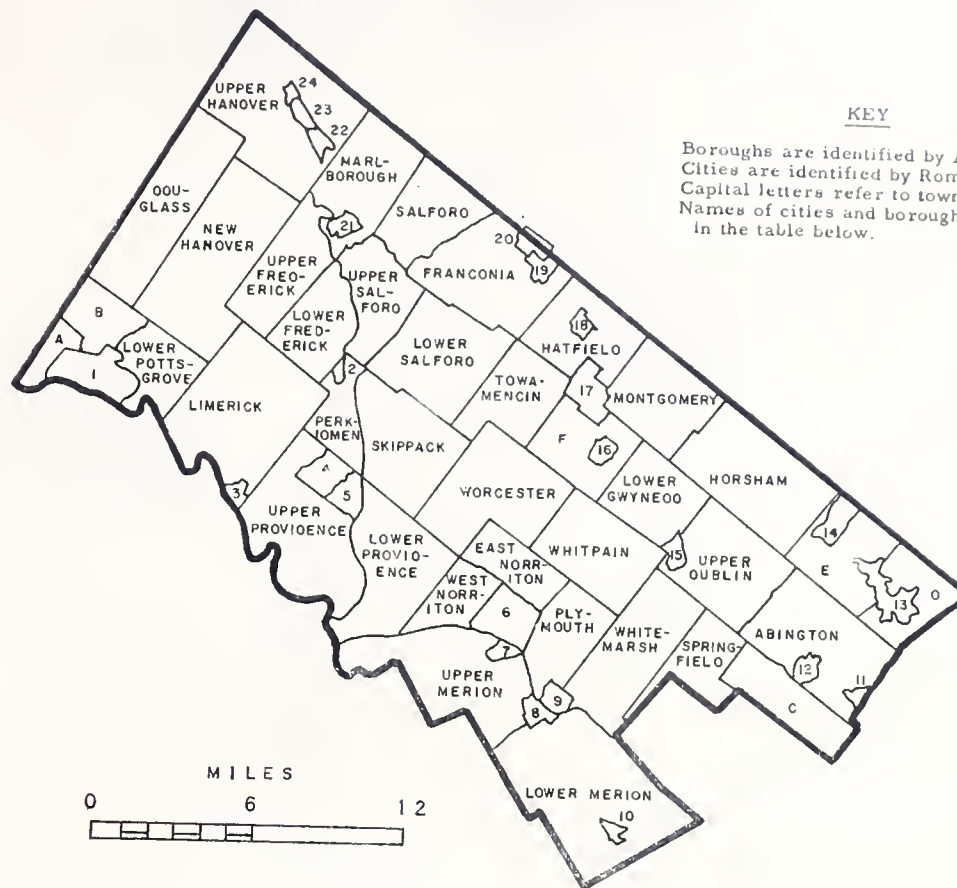
(1) As explained in the key on the map diagrams, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(a) The combined area for Coolbaugh township and Mount Pocono borough was 90.4 square miles. (b) The combined area for Smithfield township and Delaware Water Gap borough was 25.7 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States, 1940, p. 238.

# MONTGOMERY COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN MONTGOMERY COUNTY  
(For a breakdown of areas subdivided since 1940, see Appendix A.)

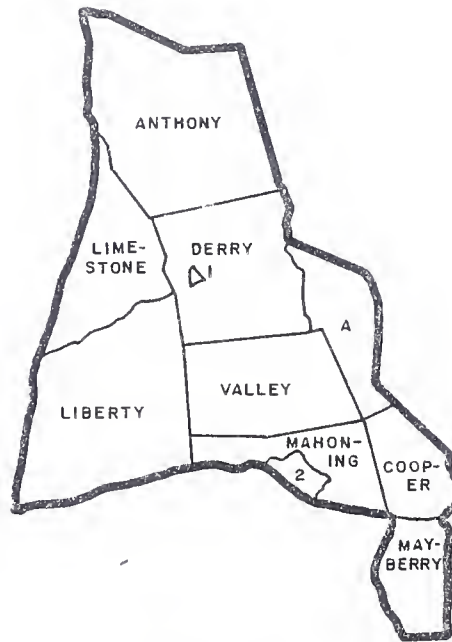
No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Montgomery County, total	353,068	516,682	492.9					
15	Abington	28,988	55,831	15.8	16	North Wales	2,998	3,673	0.6
7	Ambler	4,565	6,765	0.8	23	Pennsburg	1,625	1,698	0.6
7	Bridgeport	5,827	5,306	0.7		Perkiomen	1,211	1,992	(c)
13	Bryn Athyn	913	1,057	(a)		Plymouth	5,118	11,430	8.4
C	Cheltenham	22,854	35,990	9.0	1	Pottstown	22,589	26,144	4.9
5	Collegeville	1,900	2,254	(f)	22	Red Hill	914	1,086	(e)
9	Conshohocken	10,922	10,259	1.0	11	Rockledge	2,261	2,587	0.2
	Douglass	2,046	3,083	16.0	3	Royersford	3,862	3,969	0.7
24	East Greenville	1,945	1,931	0.6		Salford	794	1,068	10.3
	East Norriton	2,987	7,773	6.8	2	Schwenksville	563	620	(c)
	Franconia	2,774	3,910	14.2		Skippack	3,843	4,729	15.3
21	Greenlane	550	582	(b)	19	Soudertown	4,521	5,381	1.2
14	Hatboro	4,788	7,315	1.0		Springfield	11,403	20,652	7.0
18	Hatfield	1,624	1,941	0.5	20	Telford	1,514	2,183	(d)
	Hatfield	3,101	5,759	10.7		Towamencin	1,604	3,724	9.7
	Horsham	3,663	8,933	18.0	4	Trappe	773	1,264	(f)
12	Jenkintown	5,130	5,017	1.0		Upper Dublin	6,637	10,184	14.1
17	Lansdale	9,762	12,612	2.5		Upper Frederick	891	1,157	10.7
	Limerick	3,290	5,110	23.0	F	Upper Gwynedd	2,164	4,661	8.4
	Lower Frederick	1,620	2,108	8.6		Upper Hanover	1,762	2,293	(e)
	Lower Gwynedd	2,475	4,546	9.3		Upper Merion	6,404	17,096	17.5
	Lower Merion	48,745	59,420	24.0	E	Upper Moreland	8,936	21,032	7.8
D	Lower Moreland	2,245	5,731	(a)	B	Upper Pottsgrove	1,173	1,987	5.1
	Lower Pottsgrove	3,389	3,824	8.6		Upper Providence	4,486	5,607	(f)
	Lower Providence	5,887	9,955	15.9		Upper Salford	1,119	1,273	9.3
	Lower Salford	2,290	3,389	15.0	8	West Conshohocken	2,482	2,254	1.0
	Marlborough	1,432	1,875	(b)		West Norriton	4,879	8,342	5.0
	Montgomery	1,566	2,700	11.7	A	West Pottsgrove	3,007	3,501	2.5
10	Narberth	5,407	5,109	0.5		Whitemarsh	5,977	12,286	15.1
	New Hanover	1,745	3,218	21.4		Whitpain	3,063	7,331	13.5
6	Norristown	38,126	38,925	3.5		Worcester	1,939	3,250	16.3

- (1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(a) The combined area for Lower Moreland township and Bryn Athyn borough was 9.8 square miles. (b) The combined area for Marlborough township and Greenlane borough was 12.8 square miles. (c) The combined area for Perkiomen township and Schwenksville borough was 4.3 square miles. (d) Of the total land area in Telford borough, 0.4 square miles were located in Montgomery County and 0.1 in Bucks County. (e) The combined area for Upper Hanover township and Red Hill borough was 22.7 square miles. (f) The combined area for Upper Providence township and Collegeville and Trappe boroughs was 17.6 square miles.



# MONTOUR COUNTY



## KEY

Boroughs are identified by Arabic numbers.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.



POPULATION AND AREA FOR MUNICIPALITIES IN MONTOUR COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Montour County, total	16,001	16,730	129.4					
	Anthony	844	911	25.8		Mahoning	4,463	4,819	8.4
	Cooper	342	401	6.7		Mayberry	141	125	6.8
2	Danville	6,994	6,889	1.3		Valley	683	937	16.2
	Derry	663	659	(a)	1	Washingtonville	194	198	(a)
	Liberty	834	956	26.9	A	West Hemlock	274	243	7.6
	Limestone	569	592	13.3					

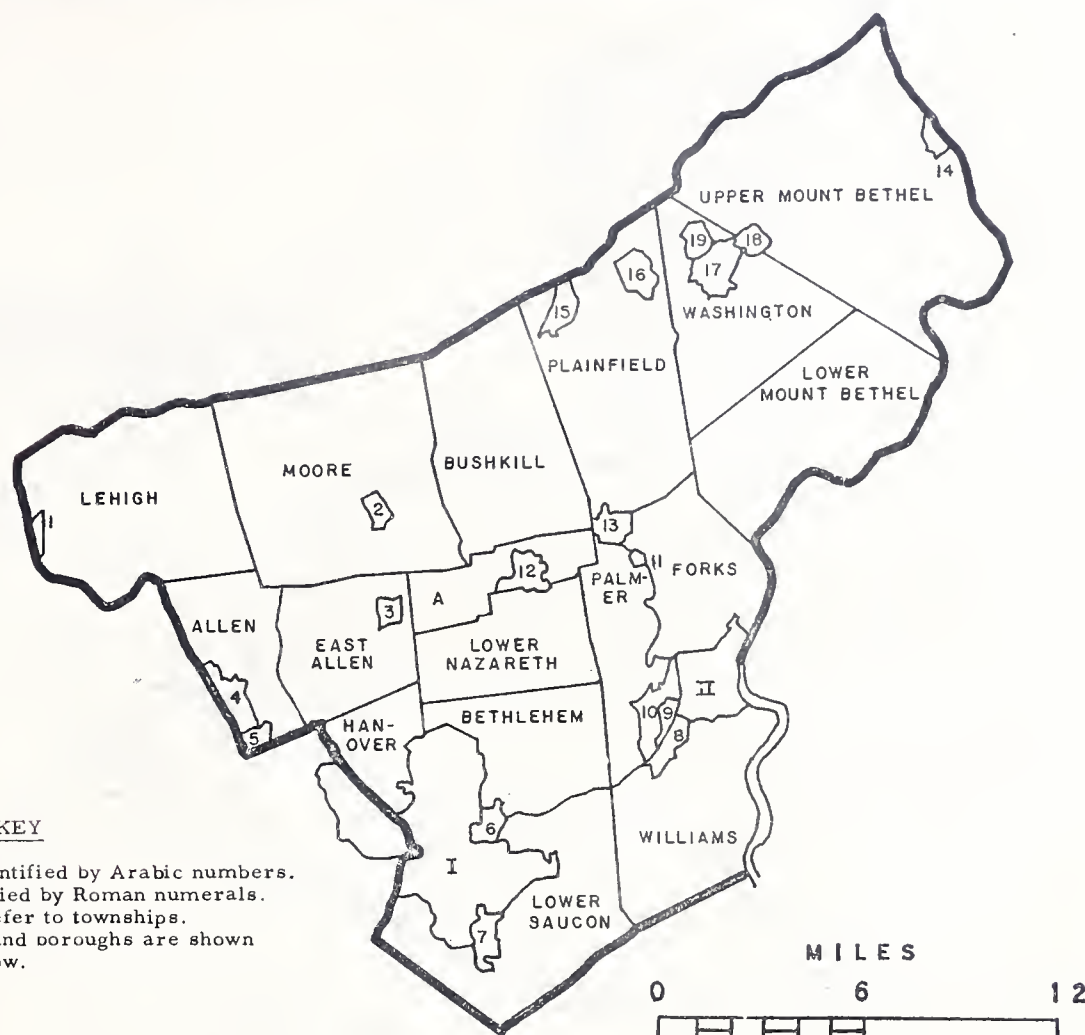
(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Derry township and Washingtonville borough was 16.4 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 238.

# NORTHAMPTON COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN NORTHAMPTON COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
Northampton County, total		185,243	201,412	373.9					
17	Allen	1,095	1,183	11.1		Moore	2,725	3,373	(c)
3	Bangor	6,050	5,766	1.5	12	Nazareth	5,830	6,209	1.7
I	Bath	1,824	1,736	1.1	4	Northampton	9,332	8,866	2.9
	Bethlehem	52,536	55,325	(a)	5	North Catasauqua	2,629	2,805	0.7
	Bethlehem	3,940	6,439	14.7		Palmer	4,086	8,823	(d)
	Bushkill	2,162	2,676	24.4	16	Pen Argyl	3,878	3,693	1.4
2	Chapman	285	237	(c)		Plainfield	3,204	3,614	25.6
	East Allen	1,275	1,538	14.3	14	Portland	551	589	(e)
18	East Bangor	988	970	(e)	19	Roseto	1,676	1,630	0.5
II	Easton	35,632	31,955	3.6	13	Stockertown	757	777	(b)
	Forks	1,948	3,249	(b)	11	Tatamy	681	762	(d)
6	Freemansburg	1,739	1,652	0.7		Upper Mount Bethel	2,613	2,944	(e)
8	Glendon	601	555	(f)	A	Upper Nazareth	2,011	2,661	7.3
	Hanover	891	1,932	7.1	1	Walnutport	1,427	1,609	0.7
7	Hellertown	5,435	6,716	1.0		Washington	2,227	2,699	17.9
	Lehigh	3,595	4,411	30.3	9	West Easton	1,368	1,228	1.0
	Lower Mount Bethel	1,990	2,307	24.2		Williams	2,381	2,823	(f)
	Lower Nazareth	1,639	1,729	13.5	10	Wilson	8,159	8,465	1.2
	Lower Saucon	4,506	5,536	25.4	15	Wind Gap	1,577	1,930	1.9

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(a) Of the total land area in the city of Bethlehem, 13.2 square miles are located in Northampton County and 4.3 square miles in Lehigh County. (b) The combined area for Forks township and Stockertown borough was 13.0 square miles. (c) The combined area for Moore township and Chapman borough was 37.9 square miles. (d) The combined area for Palmer township and Tatamy borough was 10.7 square miles. (e) The combined area for Upper Mount Bethel township and East Bangor and Portland boroughs was 44.1 square miles. (f) The combined area for Williams township and Glendon borough was 1.2 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(Pl)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States, 1940.

# NORTHUMBERLAND COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN NORTHUMBERLAND COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Northumberland County, total	117,115	104,138	453.2					
	Coal	16,539	13,530	26.4		Point	1,456	1,692	24.8
	Delaware	1,991	1,927	(a)		Ralpho	2,051	2,236	18.5
	East Cameron	878	717	11.9	11	Riverside	1,027	1,580	5.3
B	East Chillisquaque	522	547	7.6		Rockefeller	1,310	1,253	20.0
6	Herndon	677	622	(b)		Rush	784	859	25.8
	Jackson	689	754	(b)	11	Shamokin	16,879	13,674	0.8
	Jordan	767	717	17.0		Shamokin	1,766	1,681	(d)
8	Kulpmont	5,199	4,288	0.9	10	Snydertown	314	278	(d)
	Lewis	999	1,061	(c)	1	Sunbury	15,570	13,687	2.2
	Little Mahanoy	475	365	11.1	3	Turbotville	518	612	(c)
	Lower Augusta	665	696	18.5		Turbut	995	1,337	14.2
	Lower Mahanoy	1,507	1,513	21.7		Upper Augusta	1,705	1,991	19.4
2	McEwensville	297	795	(a)		Upper Mahanoy	700	683	22.8
9	Marion Heights	1,551	1,132	0.2		Washington	648	592	18.2
4	Milton	8,578	7,972	1.6	1	Watsontown	2,327	2,431	0.6
	Mount Carmel	14,222	10,760	0.7		West Cameron	495	391	12.2
7	Mount Carmel	4,687	3,331	20.9	A	West Chillisquaque	1,270	1,679	13.3
5	Northumberland	4,207	4,156	1.3		Zerbe	2,850	2,599	11.3

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

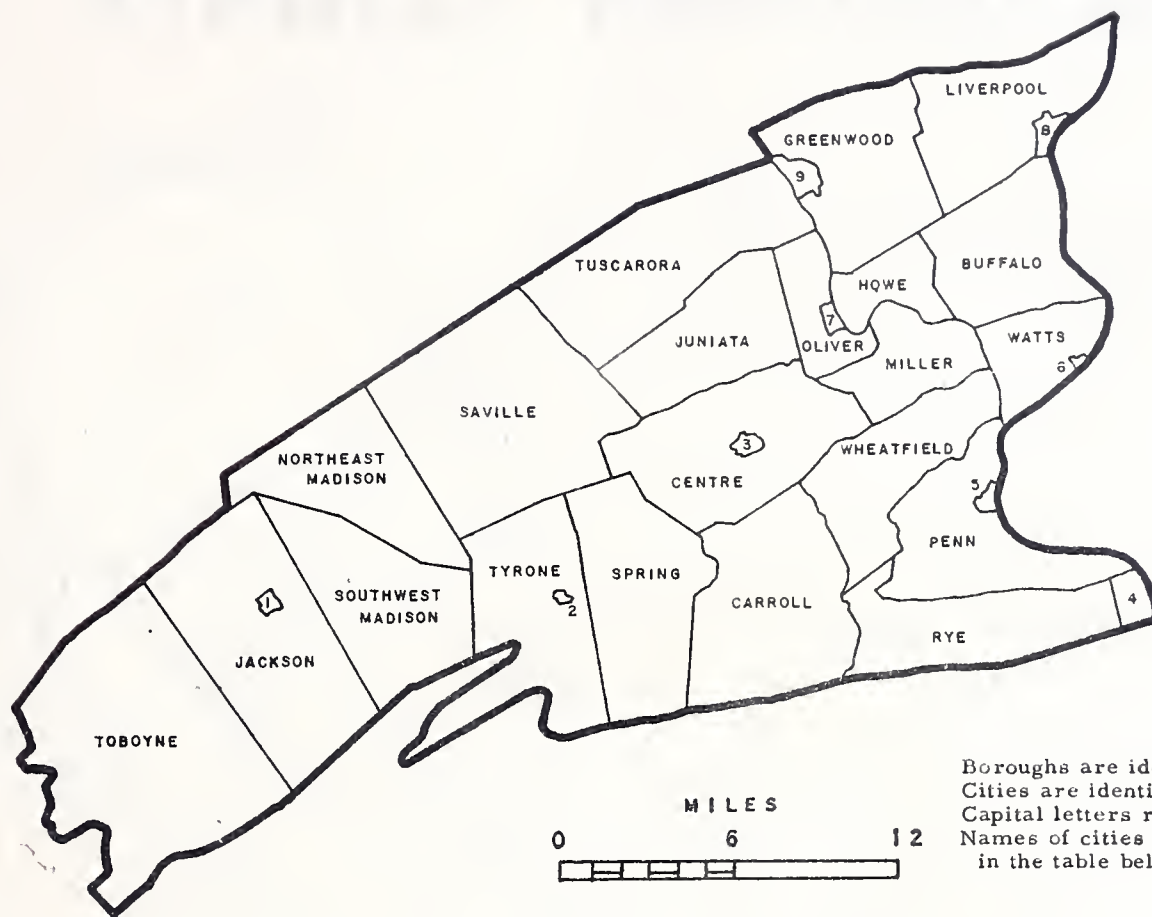
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Delaware township and McEwensville borough was 30.3 square miles. (b) The combined area for Jackson township and Herndon borough was 13.0 square miles. (c) The combined area for Lewis township and Turbotville borough was 26.7 square miles. (d) The combined area for Shamokin township and Snydertown borough was 34.0 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, *Advances in Reports*, PC(A1)-40, 1960 Census of Population, Tables 1 and 2, and U. S. Bureau of the Census, *Sixteenth Census of the United States: 1940, Areas of the United States 1940*, p. 238.



# PERRY COUNTY



## KEY

Boroughs are identified by Arabic numbers.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.

POPULATION AND AREA FOR MUNICIPALITIES IN PERRY COUNTY

Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
	1950	1960				1950	1960	
Perry County, total	24,782	26,582	550.7					
Blain	315	336	(c)	9	Millerstown	682	675	(b)
Bloomfield	1,098	987	(a)	6	New Buffalo	155	153	(f)
Buffalo	539	597	19.3	7	Newport	1,893	1,861	0.2
Carroll	1,287	1,534	34.6		Northeast Madison	433	428	25.7
Centre	844	880	(a)		Oliver	1,215	1,239	8.3
Duncannon	1,852	1,800	0.5		Penn	1,603	2,072	21.5
Greenwood	690	685	(b)		Rye	690	832	24.2
Howe	326	353	8.4		Saville	1,299	1,244	46.3
Jackson	427	378	(c)		Southwest Madison	540	567	26.1
Juniata	696	751	21.4		Spring	922	944	29.0
Landisburg	279	285	(e)		Toboyne	343	338	57.4
Liverpool	654	894	(d)		Tuscarora	708	665	30.8
Liverpool	521	546	(d)		Tyrone	1,136	1,147	(e)
Marysville	2,158	2,580	2.4		Watts	425	520	(f)
Miller	298	344	12.4		Wheatfield	754	947	21.1

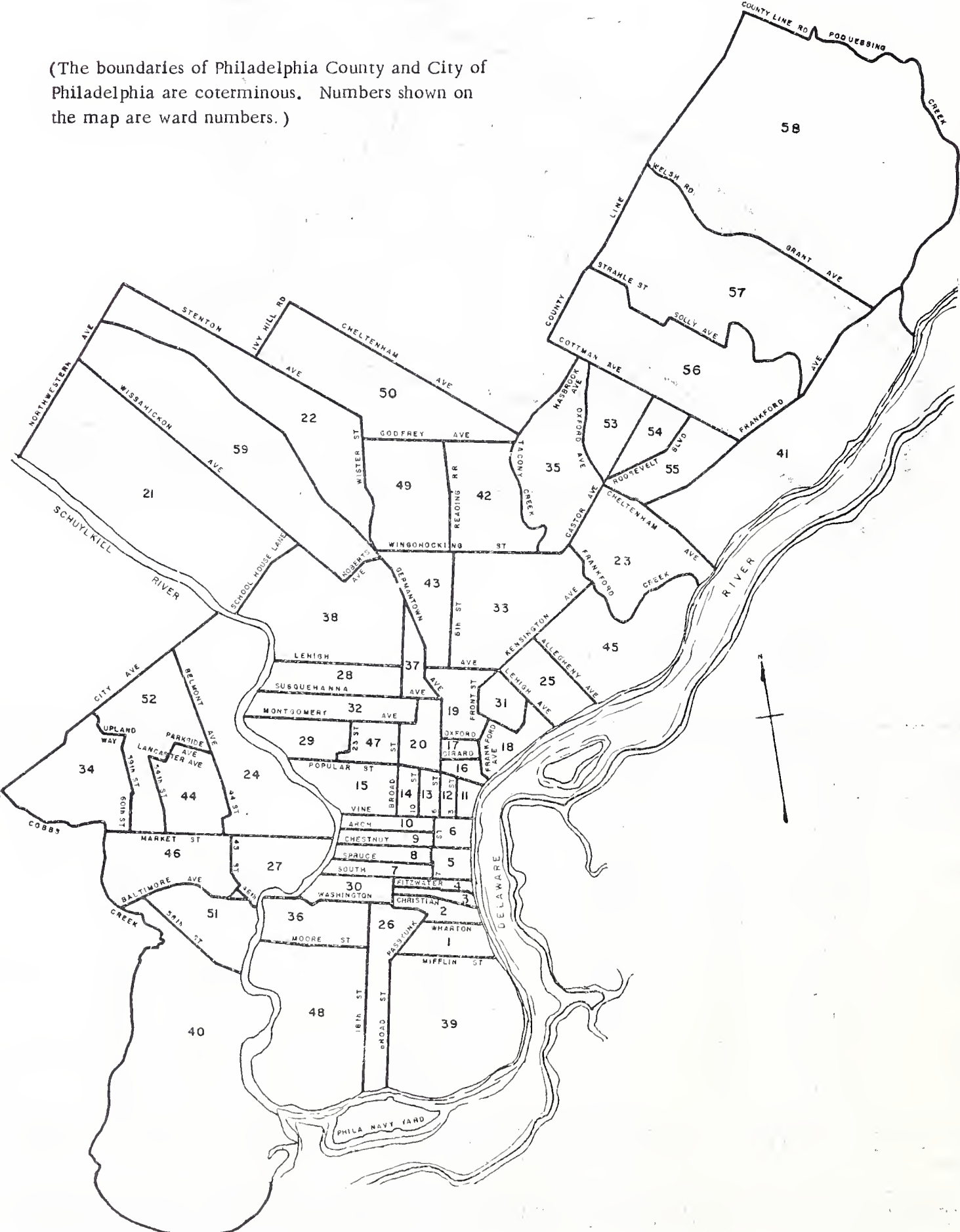
explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
square miles as of 1940. Areas have not been adjusted for annexation since 1940.

he combined area for Centre township and Bloomfield borough was 30.3 square miles. (b) The combined area for Greenwood township  
Millerstown borough was 25.3 square miles. (c) The combined area for Jackson township and Blain borough was 38.8 square miles. (d)  
combined area for Liverpool township and Liverpool borough was 22.7 square miles. (e) The combined area for Tyrone township and  
Landisburg borough was 32.4 square miles. (f) The combined area for Watts township and New Buffalo borough was 11.6 square miles.

U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and  
PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940,  
p. 239.

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(The boundaries of Philadelphia County and City of Philadelphia are coterminous. Numbers shown on the map are ward numbers.)



Between 1950 and 1960 the population of Philadelphia decreased from 2,071,650 to 2,002,512. The area of Philadelphia is 127.2 square miles. See Appendix for population figures by ward.

# PIKE COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN PIKE COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Pike County, total	8,425	9,158	545.4					
	Blooming Grove	358	424	74.2	1	Milford	1,111	1,198	(a)
	Delaware	511	549	45.2		Milford	233	386	(a)
	Dingman	361	382	57.0		Palmyra	582	651	34.9
	Greene	829	793	58.5		Porter	94	51	59.2
	Lackawaxen	1,072	1,068	78.1		Shohola	455	413	44.8
	Lehman	459	318	48.2		Westfall	599	838	31.3
2	Matamoras	1,761	2,087	0.6					

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

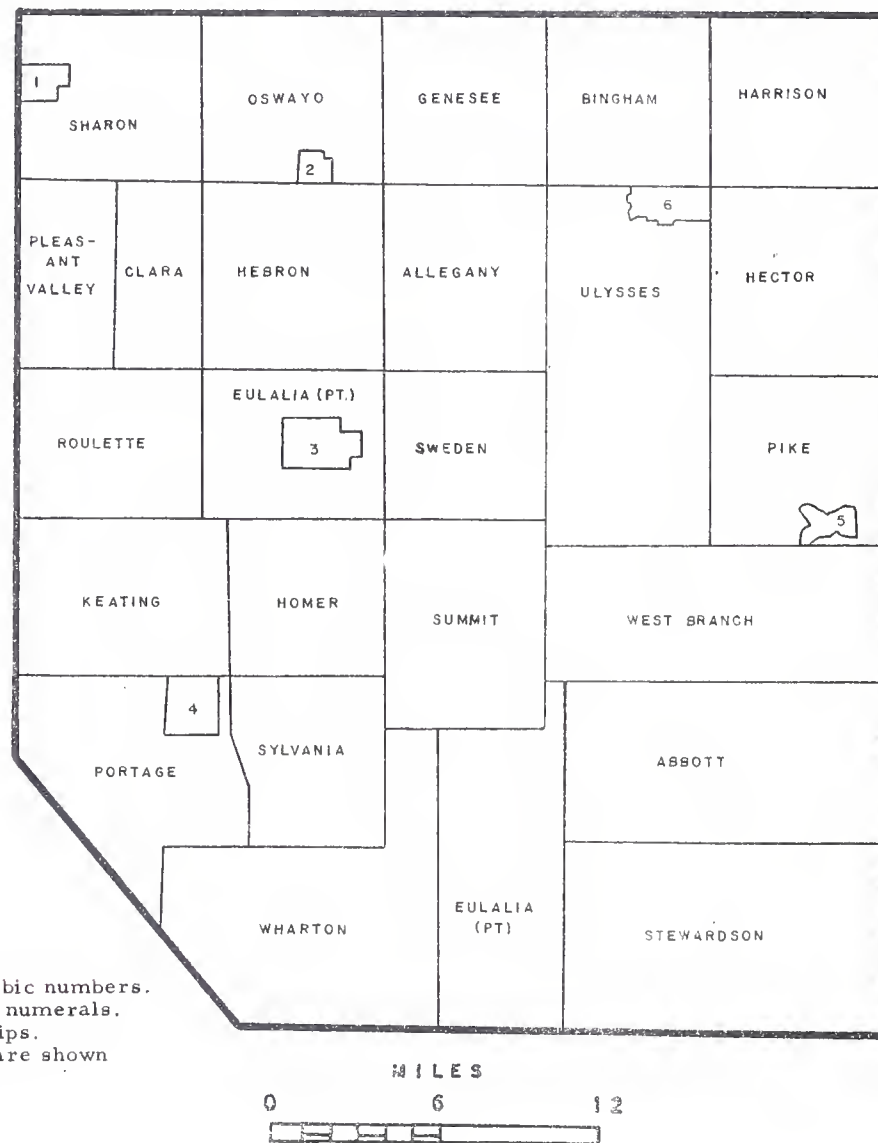
(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(a) The combined area for Milford township and Milford borough was 13.4 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC (A1)-40, 1960 Census of Population, Table 2, and PC (P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 239.



# POTTER COUNTY



## KEY

Boroughs are identified by Arabic numbers.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.

POPULATION AND AREA FOR MUNICIPALITIES IN POTTER COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Potter County, total	16,810	16,483	1,092.2					
4	Abbott	291	226	67.0	2	Oswayo	167	162	(a)
	Allegany	363	304	40.7		Oswayo	196	226	(a)
	Austin	804	721	1.0		Pike	273	213	39.5
	Bingham	532	504	36.2		Pleasant Valley	93	118	19.7
	Clara	125	115	20.1		Portage	157	188	42.6
3	Coudersport	3,210	2,889	5.6		Roulette	1,209	1,206	34.2
	Eulalia	305	447	86.7		Sharon	847	789	33.1
5	Galeton	1,646	1,646	1.0	1	Shinglehouse	1,201	1,298	3.3
	Genesee	897	838	36.2		Stewardson	82	85	77.4
	Harrison	1,111	1,110	36.8		Summit	111	52	40.8
	Hebron	403	447	43.7		Sweden	440	490	34.8
	Hector	372	318	42.3		Sylvania	71	68	30.1
	Homer	108	134	32.5		Ulysses	523	541	(b)
	Keating	300	274	42.1		West Branch	335	362	63.2
6	Lewisville	495	590	(b)		Wharton	143	122	62.8

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

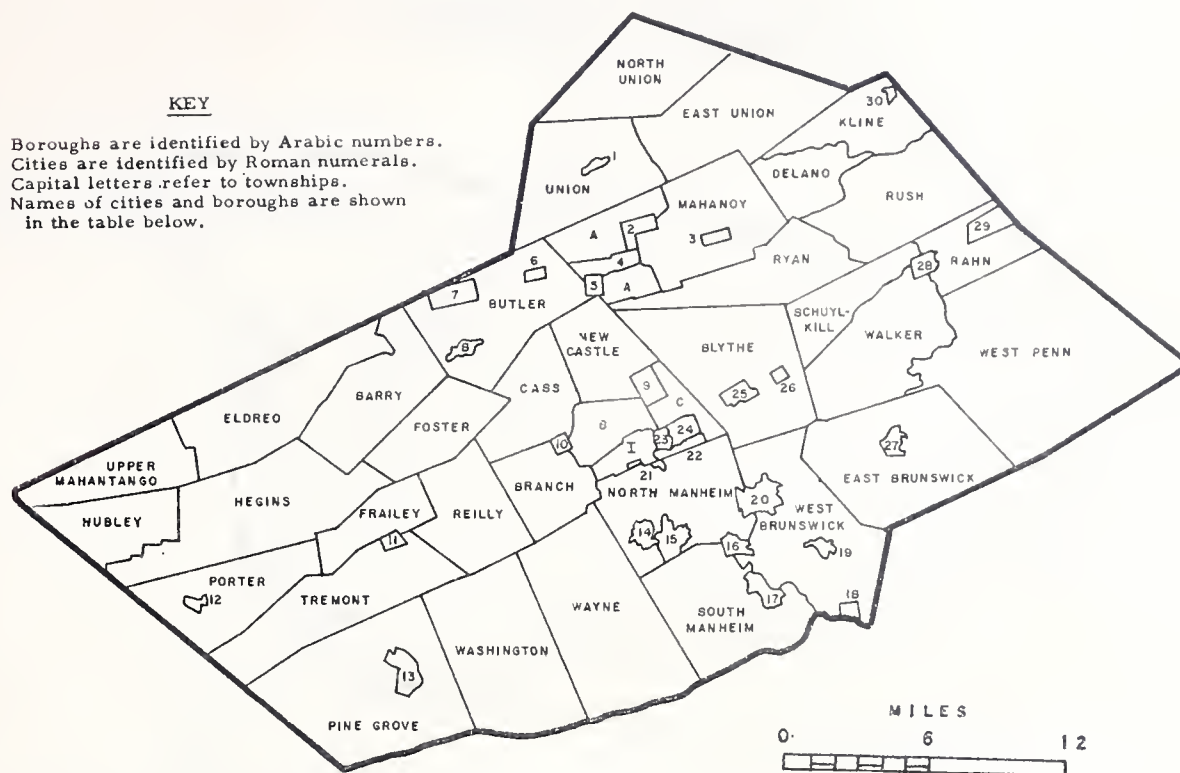
(a) The combined area for Oswayo township and Oswayo borough was 39.2 square miles. (b) The combined area for Ulysses township and Lewisville borough was 79.6 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 239.

# SCHUYLKILL COUNTY

## KEY

Boroughs are identified by Arabic numbers.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.



POPULATION AND AREA FOR MUNICIPALITIES IN SCHUYLKILL COUNTY

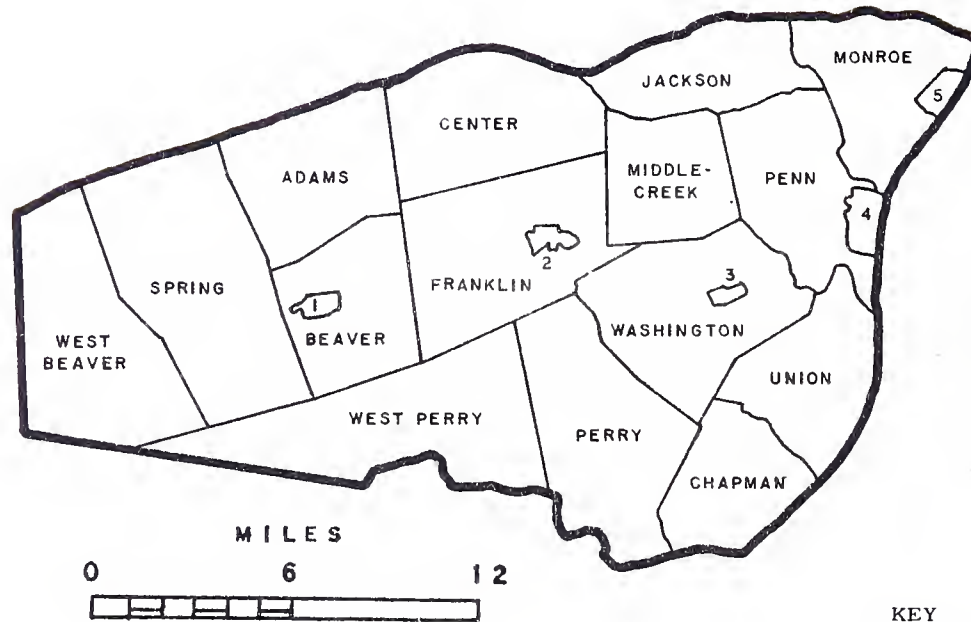
No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Schuylkill County, total	200,577	173,027	783.8					
7	Ashland	6,192	5,007	(a)	27	New Ringgold	302	314	(b)
17	Auburn	994	936	(c)		North Manheim	2,336	2,829	(d)
	Barry	1,458	1,176	19.5		North Union	1,064	879	21.1
	Blythe	1,579	1,302	29.0	B	Norwegian	1,532	1,389	6.1
	Branch	1,845	1,749	11.6	20	Orwigsburg	2,309	2,131	4.0
	Butler	4,069	3,340	21.4	22	Palo Alto	1,767	1,445	1.2
	Cass	3,846	2,950	14.0	13	Pine Grove	2,237	2,267	0.7
29	Coaldale	5,318	3,949	2.1		Pine Grove	2,871	2,887	38.4
14	Cressona	1,758	1,854	2.5	24	Port Carbon	3,024	2,775	1.0
19	Deer Lake	174	334	(g)	18	Port Clinton	451	739	(g)
	Delano	832	735	7.6		Porter	3,004	2,738	18.0
	East Brunswick	1,066	1,060	(b)	1	Pottsville	23,640	21,659	3.6
C	East Norwegian	1,336	1,198	(c)		Rahn	511	441	8.5
	East Union	1,928	1,387	25.7		Reilly	1,383	1,088	16.2
	Eldred	1,131	974	23.3	1	Ringtown	835	849	(f)
	Foster	866	600	12.8		Rush	2,316	2,392	24.2
5	Frackville	6,541	5,654	0.6		Ryan	1,077	1,022	17.6
	Frailey	838	637	9.2	9	St. Clair	5,856	5,159	1.3
4	Gilberton	2,641	1,712	1.3		Schuylkill	2,078	1,732	10.1
6	Girardville	3,864	2,958	1.9	15	Schuylkill Haven	6,597	6,470	1.3
	Gordon	1,039	888	1.1	2	Shenandoah	15,704	11,073	1.0
	Hegins	3,474	3,320	31.6		South Manheim	641	650	(e)
	Hubley	993	919	13.4	28	Tamaqua	11,508	10,173	1.5
	Kline	2,369	2,019	12.4	12	Tower City	2,054	1,968	0.5
16	Landingville	230	224	(e)		Tremont	2,102	1,893	0.8
30	McAdoo	4,260	3,560	0.3	11	Tremont	440	442	23.6
	Mahanoy	3,300	2,149	22.8		Union	1,104	1,169	(f)
3	Mahanoy City	10,934	8,536	0.5		Upper Mahantango	886	750	14.8
23	Mechanicsville	540	588	(c)		Walker	690	697	22.4
26	Middleport	942	775	0.5		Washington	1,225	1,292	31.6
10	Minersville	7,783	6,606	0.5		Wayne	1,568	1,729	34.6
21	Mount Carbon	302	308	(d)		West Brunswick	1,145	906	(g)
	New Castle	1,305	996	12.1	A	West Mahanoy	5,780	4,514	8.6
25	New Philadelphia	2,200	1,702	1.3		West Penn	2,593	2,464	57.9

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) Of the total land area of Ashland borough, 1.6 square miles are located in Schuylkill County and less than 0.1 of a square mile in Columbia County. (b) The combined area for East Brunswick township and New Ringgold borough was 31.8 square miles. (c) The combined area for East Norwegian township and Mechanicsville borough was 4.0 square miles. (d) The combined area for North Manheim township and Mount Carbon borough was 20.0 square miles. (e) The combined area for South Manheim township and Auburn and Landingville boroughs was 23.8 square miles. (f) The combined area for Union township and Ringtown borough was 22.6 square miles. (g) The combined area for West Brunswick township and Deer Lake and Port Clinton boroughs was 30.4 square miles.

See U. S. Department of Commerce, Bureau of the Census, A-100 Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixtieth Census of the United States: 1940, Areas of the United States 1940, p. 239.

# SNYDER COUNTY



## KEY

Boroughs are identified by Arabic numbers.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.

## POPULATION AND AREA FOR MUNICIPALITIES IN SNYDER COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Snyder County, total	22,912	25,922	328.6					
	Adams	648	574	20.0		Monroe	1,659	1,927	(b)
	Beaver	325	296	(a)		Penn	2,515	3,621	17.9
1	Beavertown	700	738	(a)		Perry	1,074	1,187	26.6
	Center	964	962	23.1	4	Selinsgrove	3,514	3,948	1.2
	Chapman	886	923	13.2	5	Shamokin Dam	730	1,093	(b)
	Franklin	1,323	1,444	25.6		Spring	1,091	1,094	33.9
3	Freeburg	506	575	(c)		Union	1,033	1,198	15.3
	Jackson	699	750	15.0		Washington	843	791	(c)
2	Middleburg	1,283	1,366	0.6		West Beaver	1,620	1,789	30.6
	Middlecreek	831	929	14.4		West Perry	668	717	33.8

(1) As explained in the key on the map diagrams, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Beaver township and Beavertown borough was 16.2 square miles. (b) The combined area for Monroe township and Shamokin Dam borough was 17.3 square miles. (c) The combined area for Washington township and Freeburg borough was 23.9 square miles.

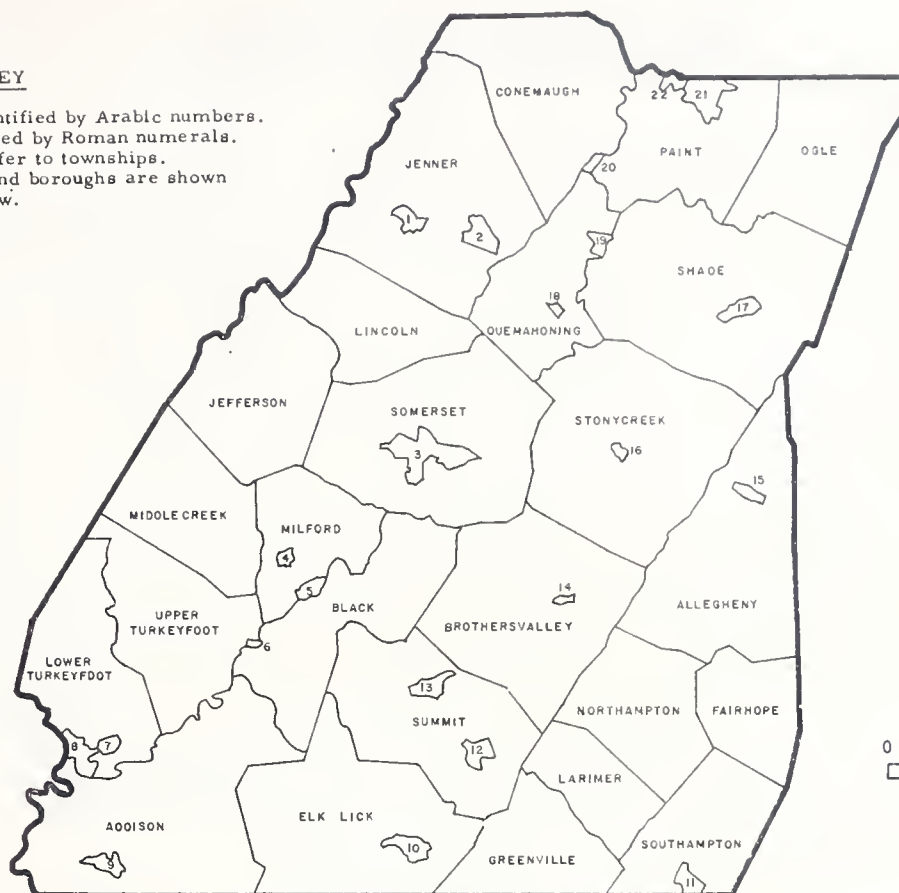
Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 239.



# SOMERSET COUNTY

## KEY

Boroughs are identified by Arabic numbers.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.



POPULATION AND AREA FOR MUNICIPALITIES IN SOMERSET COUNTY

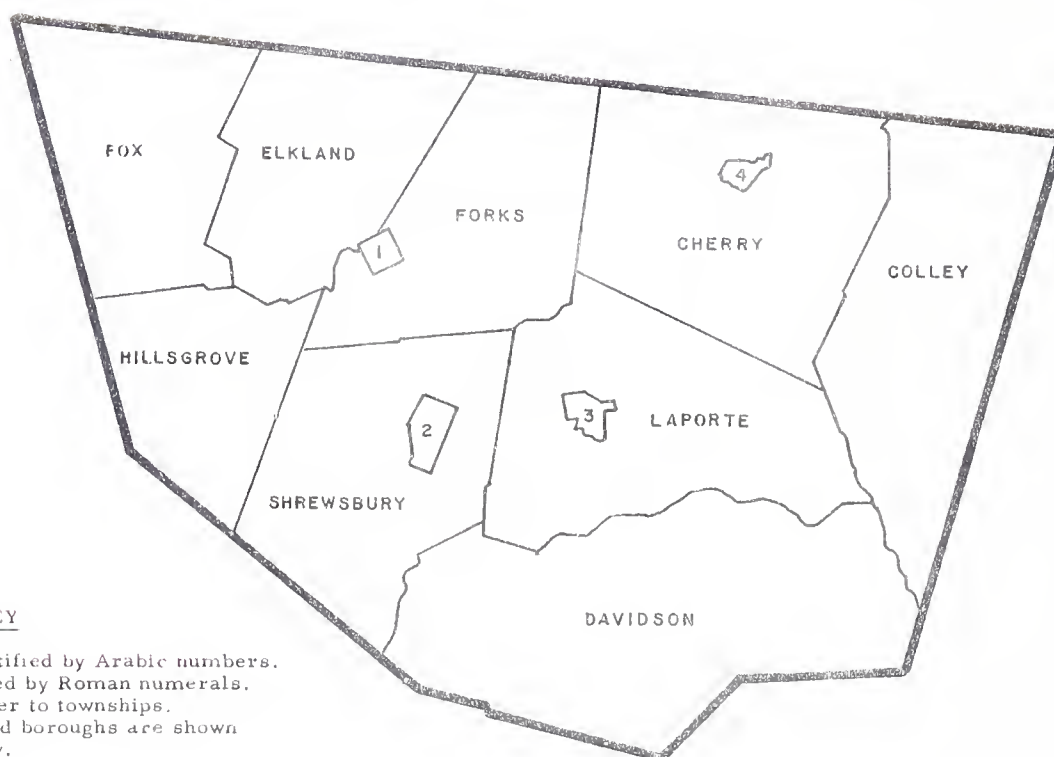
No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Somerset County, total	81,813	77,450	1,083.8					
9	Addison	237	222	(a)		Middlecreek	667	705	35.6
	Addison	1,182	962	(a)		Milford	957	1,066	(f)
	Allegheny	685	579	(b)	15	New Baltimore	221	263	(b)
20	Benson	377	350	(g)	4	New Centerville	145	198	(f)
14	Berlin	1,507	1,600	1.5		Northampton	473	422	35.4
	Black	1,136	859	41.8		Ogle	355	302	34.6
2	Boswell	1,679	1,508	0.7	22	Paint	1,547	1,275	0.6
	Brothersvalley	2,283	1,996	62.8		Paint	2,716	3,090	(g)
6	Casselman	130	103	(l)		Quemahoning	2,424	2,123	(h)
17	Central City	1,935	1,604	0.5	5	Rockwood	1,237	1,101	0.5
	Conemaugh	8,281	8,084	43.0	10	Salisbury	865	862	(c)
8	Confluence	1,037	938	1.5		Shade	4,753	3,825	70.1
	Elk Lick	2,231	2,148	(c)	16	Shanksville	342	314	(j)
	Fairhope	218	200	14.1	3	Somerset	5,936	6,347	1.2
13	Garrett	761	617	(k)		Somerset	5,976	6,808	65.5
	Greenville	694	588	24.5		Southampton	486	504	(i)
19	Hooversville	1,240	1,120	0.9		Stonycreek	1,916	1,909	(j)
	Jefferson	925	858	41.7	18	Stoystown	517	360	(h)
	Jenner	5,127	4,615	(d)		Summit	2,387	2,334	(k)
1	Jennerstown	376	422	(d)		Upper Turkeyfoot	1,035	1,002	(l)
	Larimer	524	453	21.5	7	Ursina	334	313	(e)
	Lincoln	1,678	1,624	25.2	11	Wellersburg	369	303	(i)
	Lower Turkeyfoot	765	679	(e)	21	Windber	8,010	6,994	1.9
12	Meyersdale	3,137	2,901	0.8					

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Addison township and Addison borough was 63.5 square miles. (b) The combined area for Allegheny township and New Baltimore borough was 52.5 square miles. (c) The combined area for Elk Lick township and Salisbury borough was 59.7 square miles. (d) The combined area for Jenner township and Jennerstown borough was 65.6 square miles. (e) The combined area for Lower Turkeyfoot township and Ursina borough was 37.6 square miles. (f) The combined area for Milford township and New Centerville borough was 29.0 square miles. (g) The combined area for Paint township and Benson borough was 32.2 square miles. (h) The combined area for Quemahoning township and Stoystown borough was 34.6 square miles. (i) The combined area for Southampton township and Wellersburg borough was 31.2 square miles. (j) The combined area of Stonycreek township and Shanksville borough was 66.0 square miles. (k) The combined area of Summit township and Garrett borough was 46.0 square miles. (l) The combined area for Upper Turkeyfoot township and Casselman borough was 39.1 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 239.

# SULLIVAN COUNTY



## KEY

Boroughs are identified by Arabic numbers.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.



POPULATION AND AREA FOR MUNICIPALITIES IN SULLIVAN COUNTIES

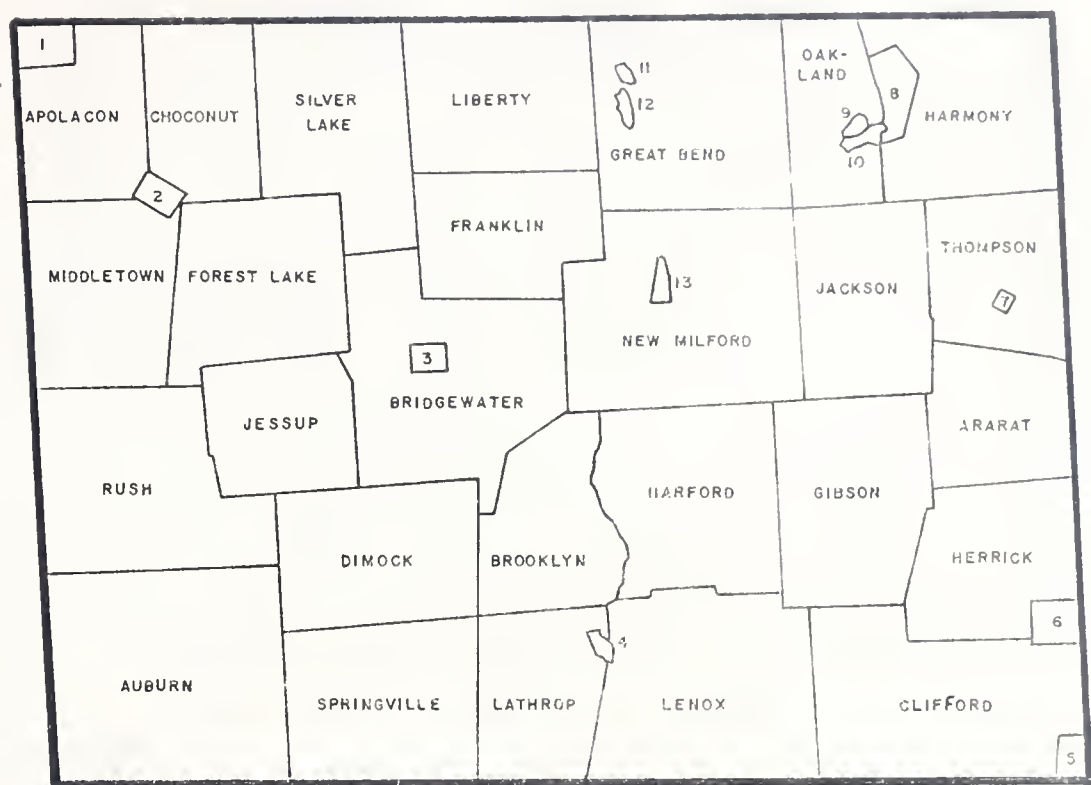
No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Sullivan County, total	6,745	6,251	477.7					
	Cherry	1,916	1,675	(a)	1	Forksville	145	131	(b)
	Colley	723	679	61.4		Fox	348	362	42.0
	Davidson	744	697	89.6		Hillsgrove	252	220	31.6
4	Dushore	759	731	(a)	3	Laporte	199	195	(c)
2	Eagles Mere	157	138	(d)		Laporte	225	162	(c)
	Elkland	597	570	40.7		Shrewsbury	306	344	(d)
	Forks	374	347	(b)					

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Cherry township and Dushore borough was 62.8 square miles. (b) The combined area for Forks township and Forksville borough was 48.1 square miles. (c) The combined area for Laporte township and Laporte borough was 48.0 square miles. (d) The combined area for Shrewsbury township and Eagles Mere borough was 53.5 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 239.

# SUSQUEHANNA COUNTY



## KEY

Boroughs are identified by Arabic numerals.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.

POPULATION AND AREA FOR MUNICIPALITIES IN SUSQUEHANNA COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Susquehanna County, total	31,970	33,137	837.1					
	Apolacon	157	172	(a)		Jackson	635	587	27.0
	Ararat	314	307	20.4		Jessup	432	396	21.7
	Auburn	1,177	1,146	51.5	8	Lanesboro	591	502	(d)
	Bridgewater	1,355	1,498	42.8		Lathrop	535	583	(f)
	Brooklyn	736	731	23.8		Lenox	1,063	983	40.9
	Choconut	215	325	(b)		Liberty	712	874	30.2
	Clifford	1,204	1,238	40.6	1	Little Meadows	196	301	(a)
	Dimock	727	883	29.4		Middletown	298	276	28.9
5	Forest City	3,122	2,651	0.9	3	Montrose	2,075	2,363	1.0
	Forest Lake	587	727	29.9	13	New Milford	880	1,129	(g)
	Franklin	528	570	23.4		New Milford	985	1,057	(g)
2	Friendsville	65	60	(b)		Oakland	871	889	(h)
	Gibson	740	745	32.1	7	Oakland	457	490	(h)
11	Great Bend	751	777	(c)		Rush	843	842	39.4
	Great Bend	846	1,088	(c)		Silver Lake	532	632	32.6
12	Hallstead	1,445	1,580	0.4		Springville	941	952	31.5
	Harford	985	985	33.5	10	Susquehanna Depot	2,646	2,591	1.0
	Harmony	412	533	(d)	7	Thompson	320	286	(i)
	Herrick	485	405	(e)		Thompson	382	315	(i)
4	Hop Bottom	375	381	(f)	6	Uniondale	350	287	(e)

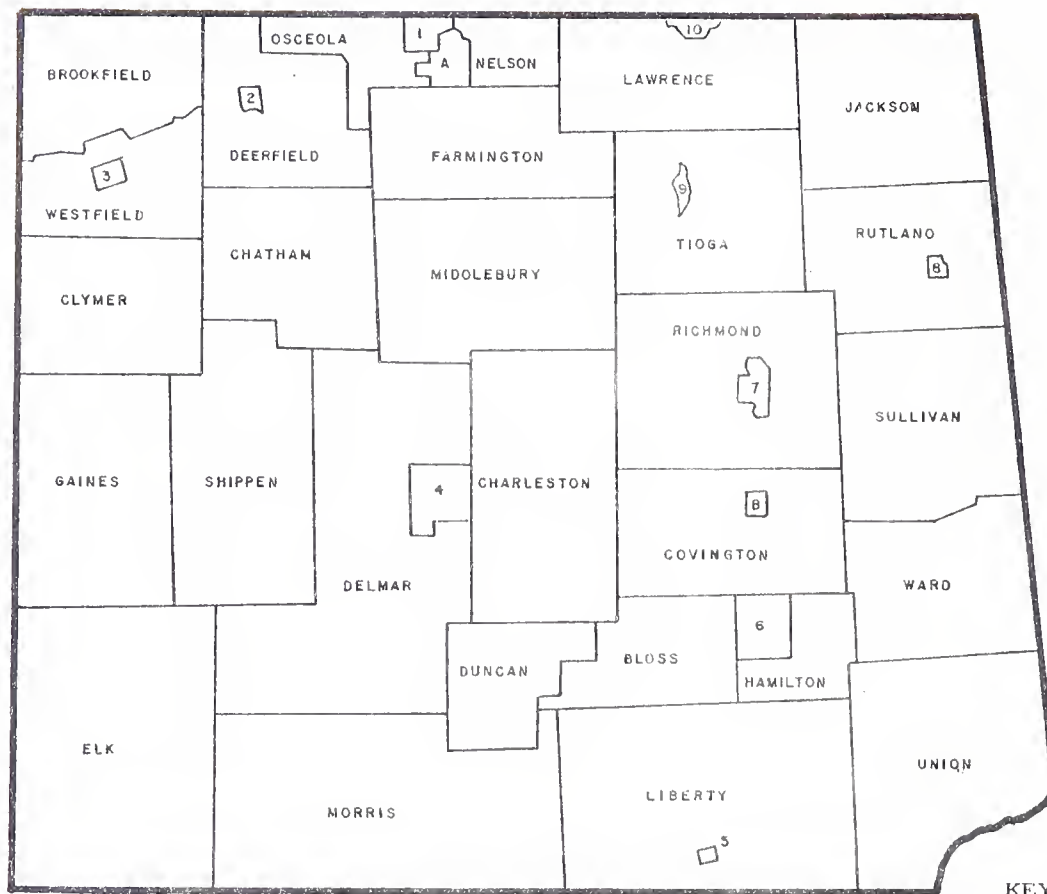
- (1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(a) The combined area for Apolacon township and Little Meadows borough was 24.5 square miles. (b) The combined area for Choconut township and Friendsville borough was 21.8 square miles. (c) The combined area for Great Bend township and Great Bend borough was 38.1 square miles. (d) The combined area for Harmony township and Lanesboro borough was 34.0 square miles. (e) The combined area for Herrick township and Uniondale borough was 27.3 square miles. (f) The combined area for Lathrop township and Hop Bottom borough was 22.1 square miles. (g) The combined area for New Milford township and New Milford borough was 46.9 square miles. (h) The combined area for Oakland township and Oakland borough was 17.3 square miles. (i) The combined area for Thompson township and Thompson borough was 22.2 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 239.



# TIOGA COUNTY



KEY

Boroughs are identified by Arabic numbers.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.

POPULATION AND AREA FOR MUNICIPALITIES IN TIOGA COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Tioga County, total	35,474	36,614	1,149.8					
	Bloss	293	301	23.8	5	Liberty	271	269	(c)
	Blossburg	1,954	1,956	4.5		Liberty	821	780	(c)
	Brookfield	492	478	31.9	7	Mansfield	2,657	2,678	2.0
	Charleston	1,730	1,893	54.3		Middlebury	1,017	1,011	50.4
	Chatham	567	531	35.9		Morris	735	703	76.9
	Clymer	576	568	35.1		Nelson	506	510	8.8
	Covington	701	673	37.6		Osceola	700	758	12.4
	Deerfield	527	578	(a)	B	Putnam	449	546	0.7
	Delmar	2,066	2,119	77.4		Richmond	1,145	1,351	51.4
	Duncan	392	317	19.7	8	Roseville	126	162	(d)
	Elk	67	50	75.2		Rutland	512	530	(d)
1	Elkland	2,326	2,189	2.5		Shippen	436	430	50.7
A	Elkland	73	49	2.8		Sullivan	790	786	43.1
	Farmington	441	414	33.1	9	Tioga	544	597	(e)
	Gaines	427	462	50.5		Tioga	811	1,023	(e)
	Hamilton	568	532	11.1		Union	952	948	45.4
	Jackson	1,294	1,534	40.5		Ward	88	40	26.3
2	Knoxville	656	694	(a)	4	Wellsboro	4,215	4,369	5.1
	Lawrence	728	868	(b)	3	Westfield	1,357	1,333	1.1
10	Lawrenceville	479	548	(b)		Westfield	985	1,036	24.1

(1) As explained in the key in the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

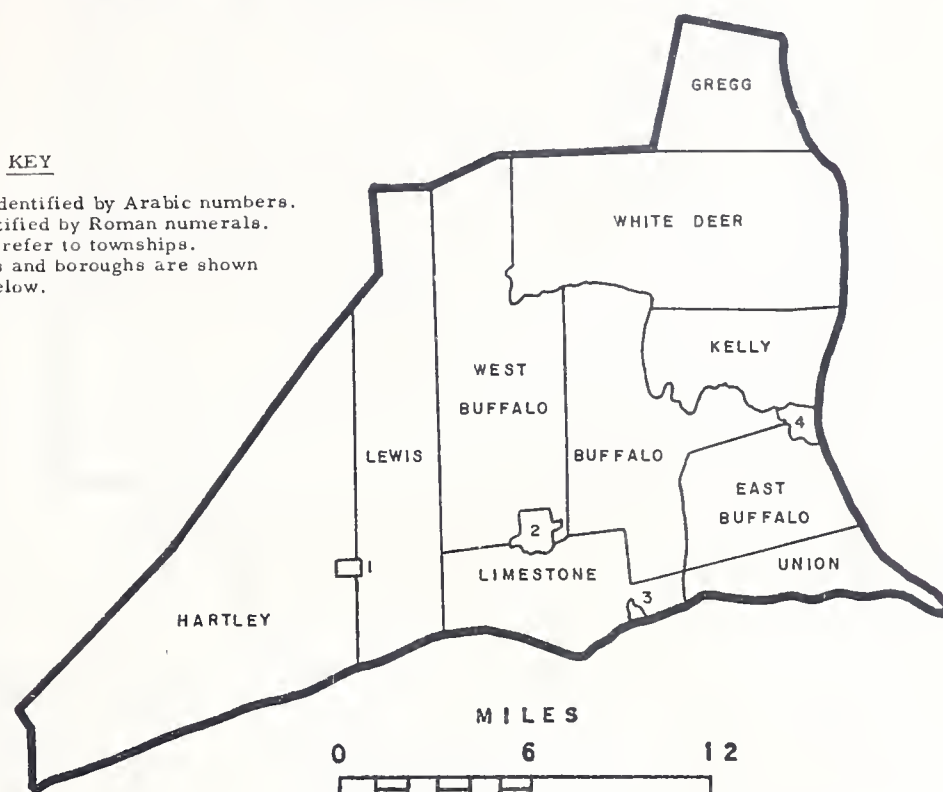
(a) The combined area for Deerfield township and Knoxville borough was 31.0 square miles. (b) The combined area for Lawrence township and Lawrenceville borough was 36.4 square miles. (c) The combined area for Liberty township and Liberty borough was 70.6 square miles. (d) The combined area for Rutland township and Roseville borough was 36.6 square miles. (e) The combined area for Tioga township and Tioga borough was 40.9 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Tables 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States, pp. 239 and 240.

# UNION COUNTY

## KEY

Boroughs are identified by Arabic numbers.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.



POPULATION AND AREA FOR MUNICIPALITIES IN UNION COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Union County, total	23,150	25,646	317.5					
	Buffalo	1,455	1,641	31.0	4	Lewisburg	5,268	5,523	0.6
	East Buffalo	2,315	3,243	17.1		Limestone	718	724	(f)
	Gregg	855	842	15.8	2	Mifflinburg	2,259	2,476	1.0
1	Hartleton	240	234	(a)	3	New Berlin	589	654	(b)
	Hartley	2,086	1,938	(a)		Union	730	749	10.9
	Kelly	2,733	3,320	18.4		West Buffalo	1,015	1,129	41.0
	Lewis	770	794	37.0		White Deer	2,117	2,379	47.9

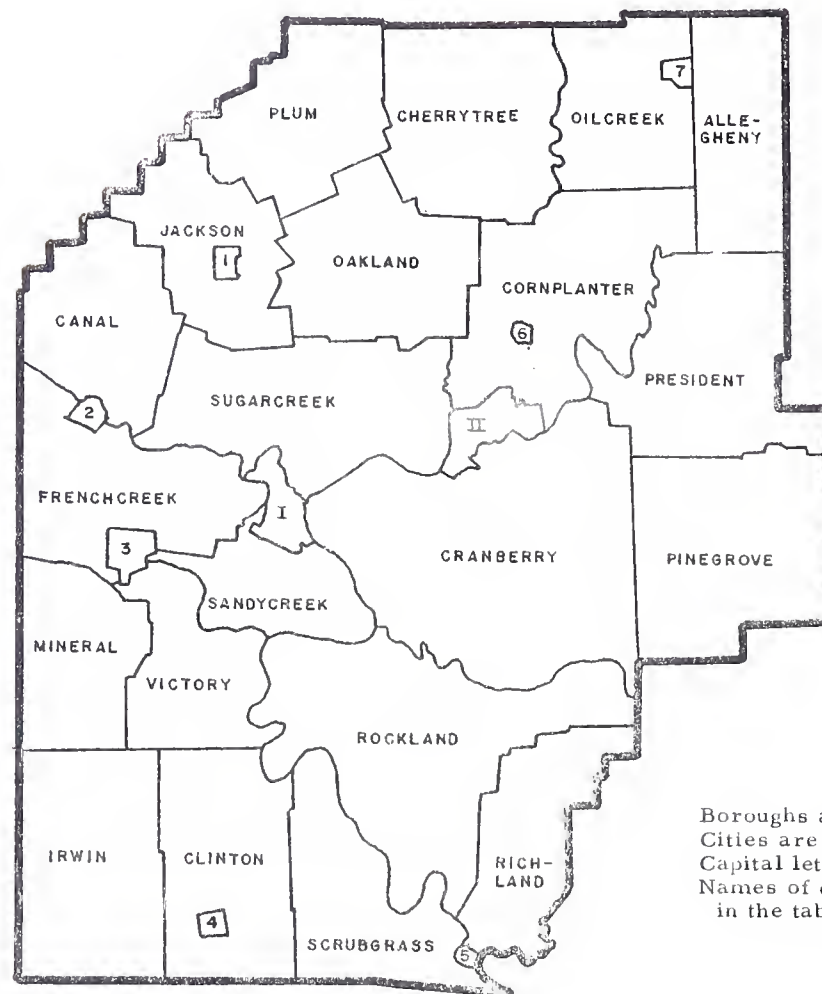
(1) As explained in the key on the map diagrams, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Hartley township and Hartleton borough was 75.8 square miles. (b) The combined area for Limestone township and New Berlin borough was 21.0 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 240.

# VENANGO COUNTY



## KEY

Boroughs are identified by Arabic numbers. Cities are identified by Roman numerals. Capital letters refer to townships. Names of cities and boroughs are shown in the table below.



POPULATION AND AREA FOR MUNICIPALITIES IN VENANGO COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Venango County, total	65,328	65,295	675.7					
	Allegheny	213	214	24.0	11	Oil City	19,581	17,692	4.1
	Canal	755	685	24.5		Oil Creek	688	723	(e)
	Cherrytree	1,296	1,568	36.3		Pinegrove	1,186	1,304	36.6
4	Clinton	817	669	(a)	7	Pleasantville	704	940	(e)
	Clintonville	307	311	(a)		Plum	754	834	28.7
1	Cooperstown	271	267	(d)	3	Polk	4,004	3,574	2.1
	Cornplanter	2,774	2,628	(b)		President	258	375	38.5
	Cranberry	5,224	6,682	69.5		Richland	722	725	(f)
5	Emlenton	945	844	(f)		Rockland	1,158	1,040	49.4
1	Franklin	10,006	9,586	2.1	6	Rouseville	1,009	923	(b)
	Frenchcreek	1,065	1,144	(c)		Sandycreek	1,155	1,590	19.0
	Irwin	1,345	1,457	33.5		Scrubgrass	762	748	26.1
	Jackson	565	686	(d)		Sugarcreek	5,814	5,951	38.1
	Mineral	410	407	18.7	2	Utica	264	274	(c)
	Oakland	1,035	1,181	28.3		Victory	241	273	19.8

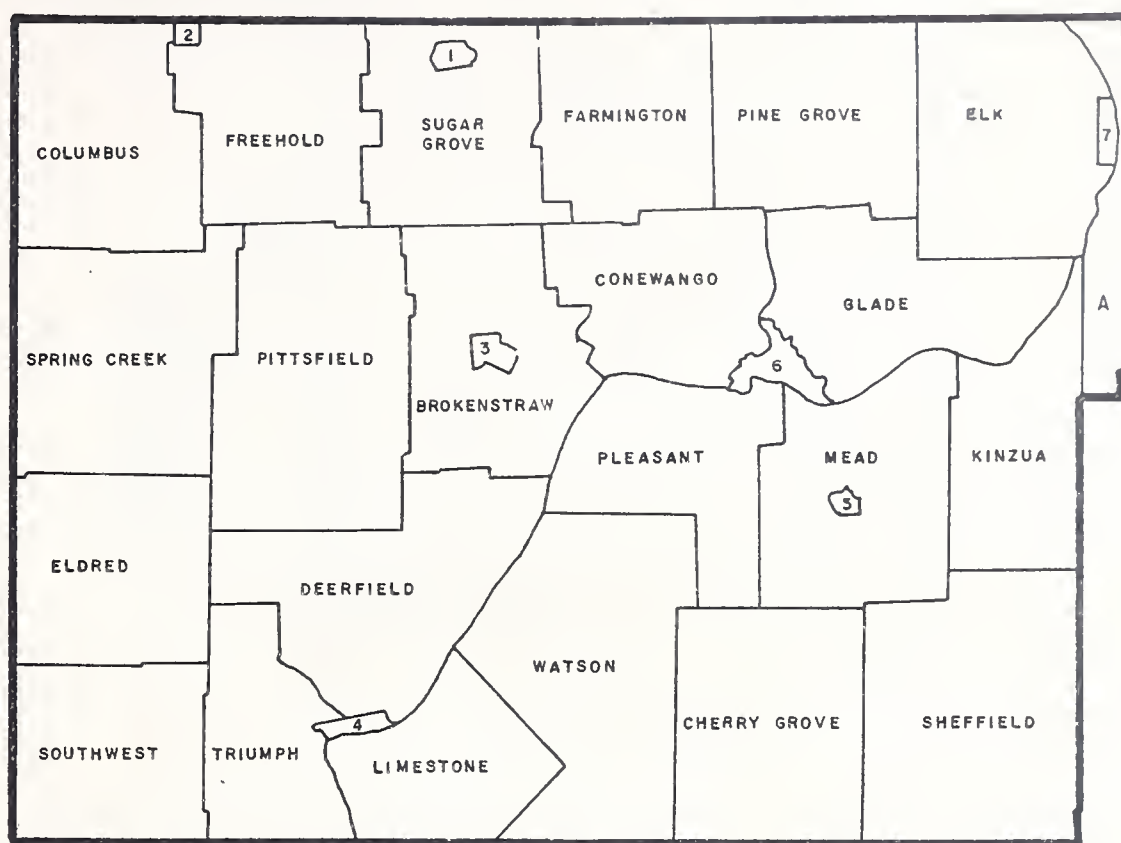
(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
 (2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(a) The combined area for Clinton township and Clintonville borough was 29.3 square miles. (b) The combined area for Cornplanter township and Rouseville borough was 39.0 square miles. (c) The combined area for Frenchcreek township and Utica borough was 36.3 square miles. (d) The combined area for Jackson township and Cooperstown borough was 23.5 square miles. (e) The combined area for Oilcreek township and Pleasantville borough was 25.3 square miles. (f) The combined area for Richland township and Emlenton borough was 23.0 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 240.



# WARREN COUNTY



## KEY

Boroughs are identified by Arabic numbers.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.

POPULATION AND AREA FOR MUNICIPALITIES IN WARREN COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Warren County, total	42,698	45,582	910.0					
2	Bear Lake	239	260	(b)		Mead	1,213	1,546	(c)
	Brokenstraw	1,138	1,310	38.7		Pine Grove	1,509	1,927	41.9
	Cherry Grove	79	113	49.4		Pittsfield	1,131	1,285	53.7
5	Clarendon	748	825	(c)		Pleasant	902	1,426	32.5
	Columbus	1,286	1,509	43.2		Sheffield	2,834	2,621	59.1
	Conewango	5,680	6,377	30.5		Southwest	487	583	34.8
A	Corydon	263	207	13.8		Spring Creek	714	712	50.1
	Deerfield	260	252	(a)	1	Sugar Grove	520	636	(d)
	Eldred	737	713	37.4		Sugar Grove	939	1,243	(d)
	Elk	251	317	43.7	4	Tidioute	998	860	(a)
	Farmington	863	1,006	35.7		Triumph	300	249	28.6
	Freehold	909	886	(b)	6	Warren	14,849	14,505	2.5
	Glade	1,054	1,119	37.9		Watson	127	148	52.9
	Kinzua	485	458	30.4	3	Youngsville	1,944	2,211	1.0
	Limestone	222	264	27.1	7	Cornplanter			
						Indian Reservation	17	14	1.3

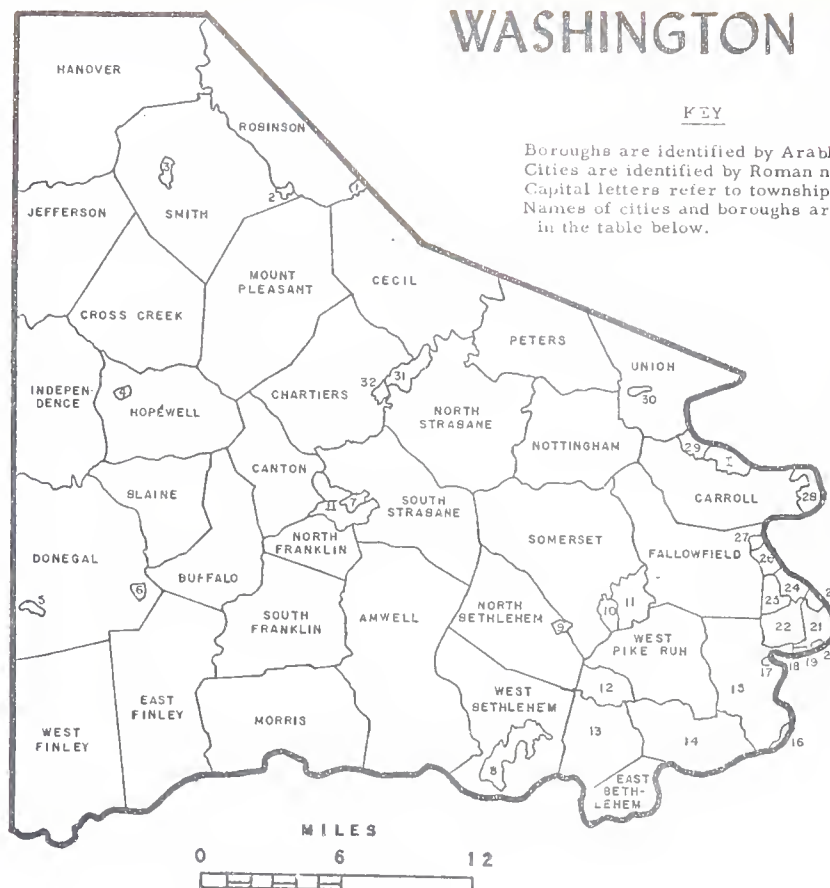
(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(a) The combined area for Deerfield township and Tidioute borough was 45.8 square miles. (b) The combined area for Freehold township and Bear Lake borough was 39.4 square miles. (c) The combined area for Mead township and Clarendon borough was 40.7 square miles. (d) The combined area for Sugar Grove township and Sugar Grove borough was 37.9 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 240.

## WASHINGTON COUNTY



POPULATION AND AREA FOR MUNICIPALITIES IN WASHINGTON COUNTY

No. (1)	Name (1)	Population		Land area(2) (square miles)	No. (1)	Name	Population		Land area(2) (square miles)
		1950	1960				1950	1960	
	Washington County, <sup>(3)</sup> total	209,628	217,271	857.5					
21	Allenport	923	981	2.0		Independence	1,656	1,895	25.0
	Amwell	2,518	2,808	43.1		Jefferson	1,152	1,229	24.3
12	Beallsville	598	481	(i)	22	Long Branch	450	517	(c)
11	Bentleyville	3,295	3,160	2.8	1	McDonald	2,053	2,427	(f)
	Blaine	632	643	11.8	8	Marianna	1,269	1,088	1.1
	Buffalo	1,128	1,270	20.7	2	Midway	993	1,012	(g)
3	Burgettstown	2,379	2,383	0.5	1	Monongahela	8,922	8,388	1.8
15	California	2,831	5,978	(c)		Morris	919	927	30.2
31	Canonsburg	12,072	11,877	1.6		Mount Pleasant	2,956	3,007	36.0
	Canton	7,165	7,820	14.8	29	New Eagle	2,316	2,670	1.0
	Carroll	4,531	6,205	15.0		North Bethlehem	1,725	1,715	22.0
	Cecil	7,743	8,563	27.3	27	North Charleroi	2,554	2,259	0.3
14	Centerville	5,845	5,088	12.6		North Franklin	2,816	3,882	6.7
26	Charleroi	9,872	8,148	0.7		North Strabane	5,465	7,322	27.6
	Chartiers	6,211	7,225	24.0		Nottingham	1,018	1,463	19.3
6	Claysville	963	986	(a)		Peters	3,004	7,126	19.6
17	Coal Center	584	419	(c)		Robinson	1,992	2,150	(g)
9	Cokesburg	1,170	989	0.3	19	Roscoe	1,396	1,315	0.1
	Cross Creek	1,967	1,783	26.1		Smith	6,619	6,362	33.8
13	Deemston	775	873	(b)		Somerset	2,006	2,282	32.4
	Donegal	1,866	1,916	(a)		South Franklin	1,029	1,308	21.8
28	Donora	12,186	11,131	1.2		South Strabane	4,019	5,872	23.2
23	Dunlevy	379	408	(d)	24	Speers	1,089	1,479	(d)
	East Bethlehem	5,074	4,180	(b)	20	Stockdale	870	815	(c)
	East Finley	916	897	34.9	25	Twilight	318	301	(d)
7	East Washington	2,304	2,483	0.5		Union	3,924	5,611	(h)
18	Elco	596	521	(c)	11	Washington	26,280	23,545	3.5
10	Ellsworth	1,670	1,456	0.7	5	West Alexander	466	468	(a)
	Fallowfield	4,214	5,350	(d)		West Bethlehem	1,900	1,783	22.0
30	Finleyville	684	582	(h)	16	West Brownsville	1,610	1,907	0.3
	Hanover	1,852	2,456	48.2		West Fioley	891	780	39.3
	Hopewell	609	800	(e)	4	West Middletown	268	199	(e)
32	Houston	1,957	1,865	0.8		West Pike Run	2,878	2,442	(i)

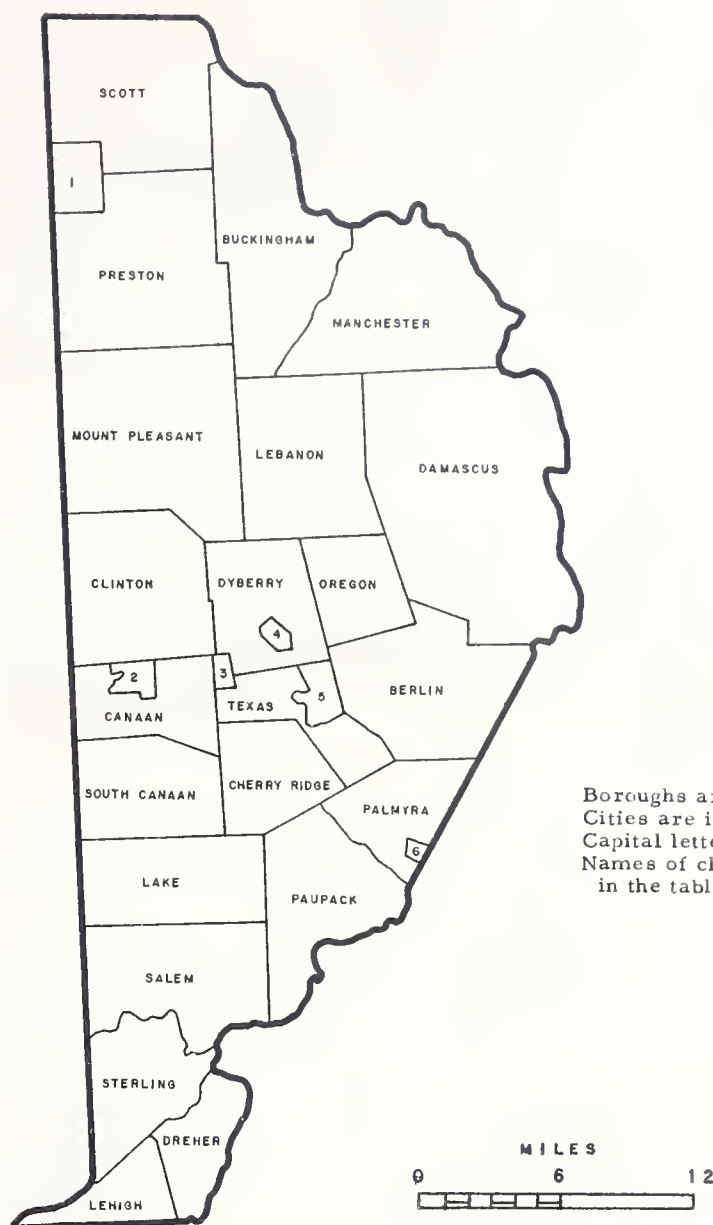
(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(3) Detail may not add to total because East Pike Run township which had a population of 4,696 in 1950 was annexed to California borough on June 21, 1954.

(a) The combined area for Claysville and West Alexander boroughs and Donegal township was 41.9 square miles. (b) The combined area for Deemston borough and East Bethlehem township was 15.4 square miles. (c) The combined area for California Coal Center, Elco, Long Branch and Stockdale boroughs was 16.4 square miles. (d) The combined area of Fallowfield township and Dunlevy, Speers, and Twilight boroughs was 25.0 square miles. (e) The combined area of Hopewell township and West Middletown borough was 20.9 square miles. (f) Of the total land area in McDonald borough, 0.2 square miles are located in Allegheny County and 0.3 square miles in Washington County. (g) The combined area of Robinson township and Midway borough was 21.6 square miles. (h) The combined area for Finleyville borough and Union township was 15.8 square miles. (i) The combined area of West Pike Run township and Beallsville borough was 18.5 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Ad. Reports PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 240.



POPULATION AND AREA FOR MUNICIPALITIES IN WAYNE COUNTY

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	Wayne County, total	28,478	28,237	743.3					
4	Berlin	971	1,010	38.9		Manchester	667	558	45.2
	Bethany	148	181	(a)		Mount Pleasant	1,007	892	57.7
	Buckingham	612	593	46.1		Oregon	344	322	17.2
	Canaan	1,838	1,831	18.9		Palmyra	514	568	16.4
	Cherry Ridge	544	729	21.8		Paupack	336	411	27.8
6	Clinton	1,266	1,132	37.7		Preston	950	879	(b)
	Damascus	1,898	1,703	82.6	3	Prompton	197	204	(a)
	Dreher	691	654	17.3		Salem	1,289	1,324	31.4
	Dyberry	584	594	(a)		Scott	473	447	45.4
	Hawley	1,602	1,433	0.7		South Canaan	1,138	1,058	27.4
5	Honesdale	5,662	5,569	4.3	1	Starrucca	326	330	(b)
	Lake	1,506	1,621	28.8		Sterling	440	490	27.6
	Lebanon	363	300	37.8		Texas	1,598	1,765	14.3
	Lehigh	446	533	11.9	2	Waymart	1,068	1,106	2.8

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Dyberry township and Bethany and Prompton boroughs was 25.4 square miles. (b) The combined area for Presto township and Starrucca borough was 57.9 square miles.

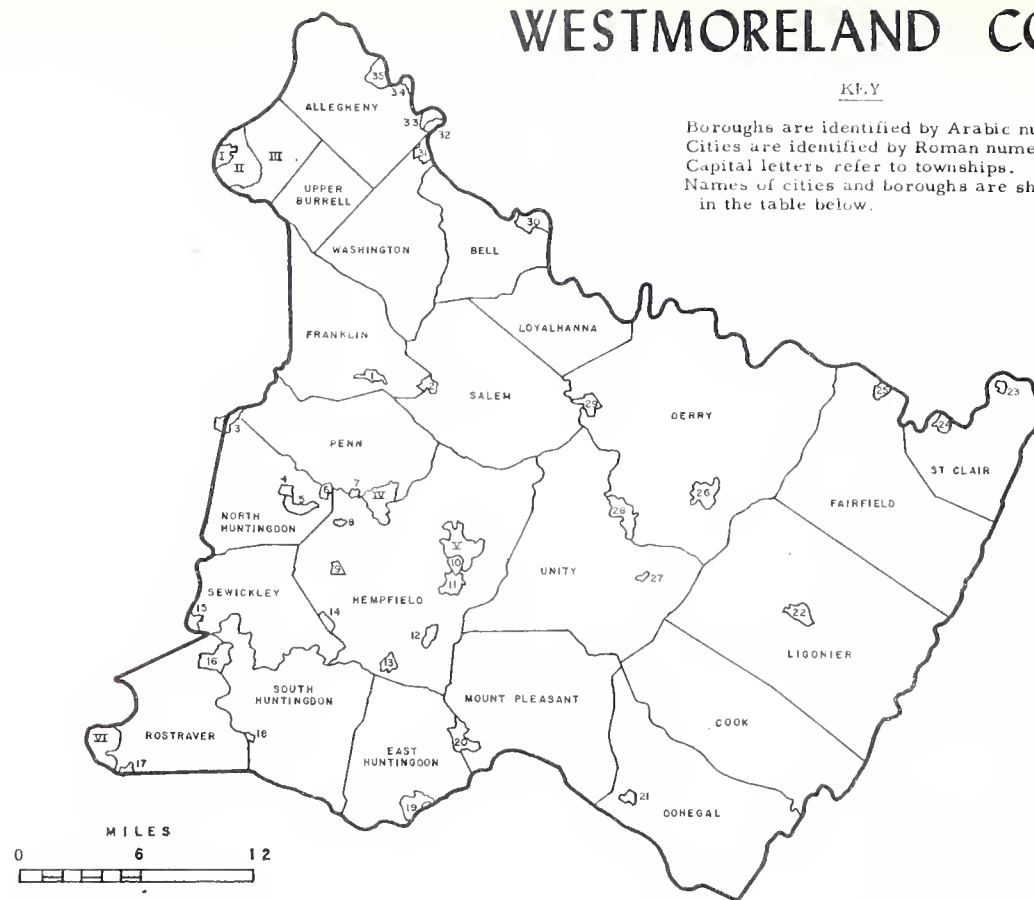
Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2 and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, p. 240.



## WESTMORELAND COUNTY

KEY

Boroughs are identified by Arabic numbers.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.



POPULATION AND AREA FOR MUNICIPALITIES IN WESTMORELAND COUNTY

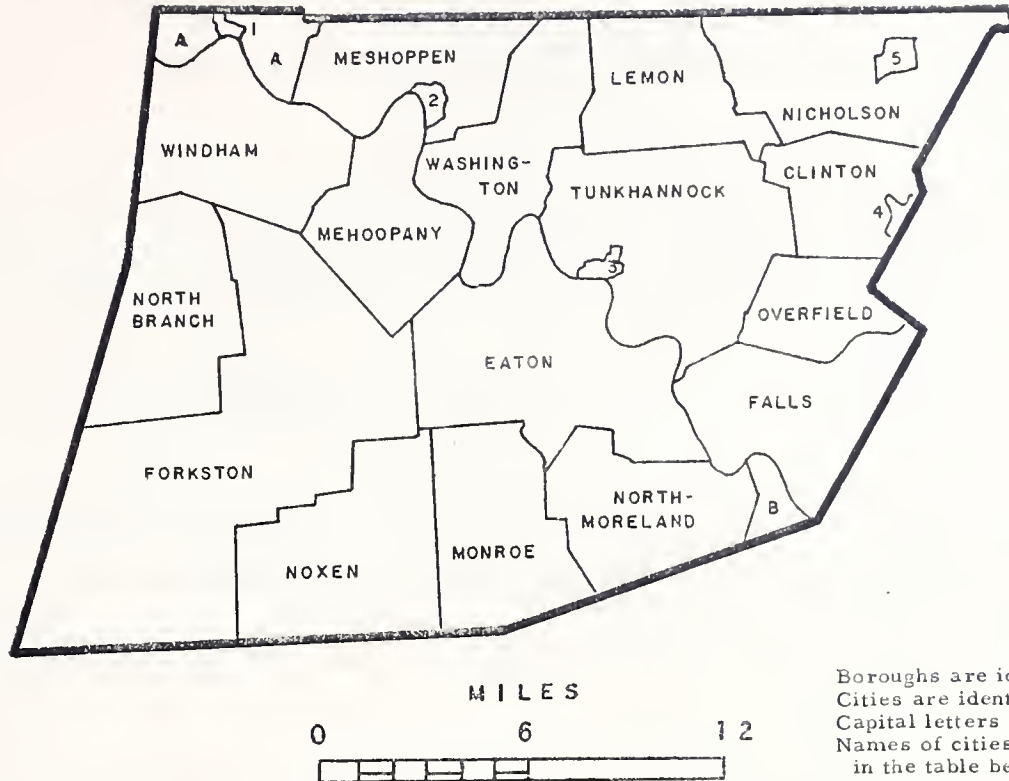
No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
Westmoreland County, total		313,179	352,629	1,024.9					
8	Adamsburg	238	191	(e)	20	Mount Pleasant	10,111	10,365	56.9
I	Allegheny	4,627	5,363	(a)	29	New Alexandria	523	685	(b)
	Arnold	10,263	9,437	0.7	24	New Florence	924	958	(f)
9	Arona	482	467	(e)	11	New Kensington	25,146	23,485	3.8
30	Avonmore	1,367	1,351	1.4	2	New Salem	695	1,313	(g)
	Bell	2,037	2,005	21.7	17	North Belle Vernon	3,147	3,148	0.4
25	Bolivar	828	716	(d)		North Huntingdon	11,536	21,853	27.3
	Cook	1,212	1,496	46.1	4	North Irwin	1,076	1,143	1.0
26	Derry	3,752	3,426	0.4	31	Oklahoma	930	983	(l)
	Derry	14,894	15,445	(b)	7	Penn	987	858	0.3
21	Donegal	198	216	(c)		Penn	7,461	10,702	32.9
	Donegal	1,327	1,353	(c)		Rostraver	8,858	9,884	33.3
	East Huntingdon	5,984	6,574	33.1		St. Clair	1,104	1,250	(f)
32	East Vandergrift	1,665	1,388	0.2		Salem	5,072	5,143	(g)
1	Export	1,690	1,518	0.3	19	Scottdale	6,249	6,244	1.1
	Fairfield	1,832	1,881	(d)	23	Seward	852	754	(f)
	Franklin	4,937	8,517	36.4		Sewickley	6,285	6,703	(h)
V	Greensburg	16,923	17,383	1.7	18	Smithton	690	649	(i)
	Hempfield	22,463	29,704	(e)	11	South Greensburg	2,980	3,058	0.5
13	Hunker	404	380	(e)		South Huntingdon	5,901	6,073	(i)
34	Hyde Park	758	683	(a)	10	Southwest Greensburg	3,144	3,264	0.4
5	Irwin	4,228	4,270	0.3	15	Suterville	854	964	(h)
1V	Jeannette	16,172	16,565	2.3	3	Trafford	3,811	4,190	(j)
28	Latrobe	11,811	11,932	1.6		Unity	12,392	15,519	(k)
22	Ligonier	2,160	2,276	0.4		Upper Burrell	1,310	1,964	15.1
	Ligonier	4,690	5,566	90.9	33	Vandergrift	9,524	8,742	1.0
III	Lower Burrell	6,445	11,952	11.6		Washington	2,995	4,324	(l)
	Loyalhanna	1,811	1,582	22.0	35	West Leechburg	1,113	1,323	1.2
14	Madison	386	399	(e)	16	West Newton	3,619	3,982	0.5
6	Manor	1,230	1,136	0.3	27	Youngstown	577	590	(k)
VI	Monessen	17,896	18,424	2.0	12	Youngwood	2,720	2,813	0.7
	Mount Pleasant	5,883	6,107	0.8					

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(a) The combined area for Allegheny township and Hyde Park borough was 31.2 square miles. (b) The combined area for Derry township and New Alexandria borough was 97.8 square miles. (c) The combined area for Donegal township and Donegal borough was 48.7 square miles. (d) The combined area for Fairfield township and Bolivar borough was 60.7 square miles. (e) The combined area for Hempfield township and Adamsburg, Arona, Hunker, and Madison boroughs was 84.4 square miles. (f) The combined area for St. Clair township and New Florence and Seward boroughs was 29.3 square miles. (g) The combined area for Salem township and New Salem borough was 48.8 square miles. (h) The combined area for Sewickley township and Suterville borough was 27.5 square miles. (i) The combined area for South Huntingdon township and Smithton borough was 44.6 square miles. (j) Of the total land area in Trafford borough, 0.8 square miles are located in Westmoreland County and 0.3 square miles in Allegheny County. (k) The combined area for Unity township and Youngstown borough was 68.0 square miles. (l) The combined area for Washington township and Oklahoma borough was 33.4 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, *Advances in Reports*, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, *Sixty Years of the Census, 1900-1960*, Census of the United States: 1940, *Areas of the United States*, p. 240.

# WYOMING COUNTY



## KEY

Boroughs are identified by Arabic numerals.  
Cities are identified by Roman numerals.  
Capital letters refer to townships.  
Names of cities and boroughs are shown  
in the table below.

POPULATION AND AREA FOR MUNICIPALITIES IN WYOMING COUNTY

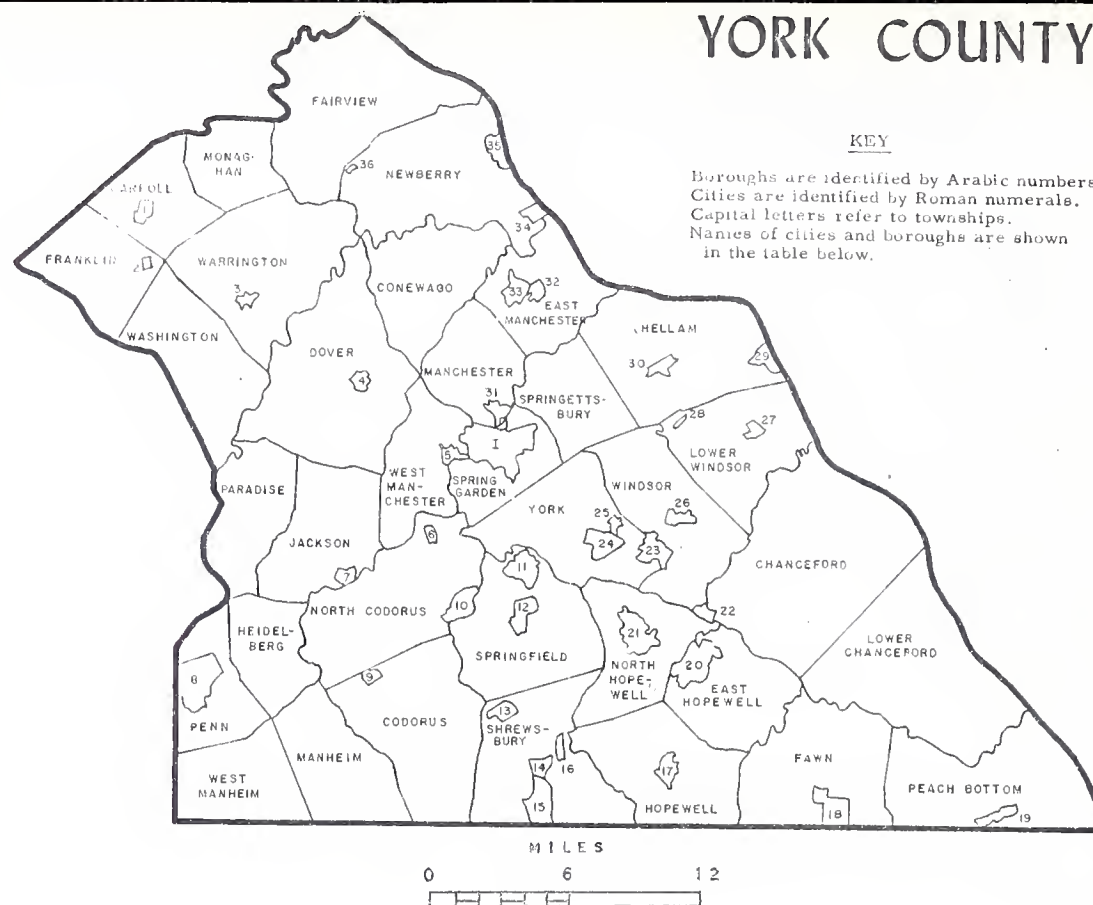
No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (square mil
		1950	1960				1950	1960	
	Wyoming County, total	16,766	16,813	396.4					
A	Braintrim	317	334	(a)	5	Monroe	1,089	1,024	21.7
	Clinton	354	420	(b)		Nicholson	979	942	0.9
	Eaton	778	861	35.2		Nicholson	569	686	23.4
B	Exeter	470	503	2.4		North Branch	156	118	19.0
4	Factoryville	1,005	991	(b)		Northmoreland	732	720	20.2
	Falls	1,456	1,331	20.2		Noxen	1,064	966	28.5
	Forkston	192	205	74.9		Overfield	664	644	9.8
1	Laceyville	505	468	(a)	3	Tunkhannock	2,170	2,297	0.3
	Lemon	557	567	15.7		Tunkhannock	1,208	1,389	31.5
	Mehoopany	548	600	16.9		Washington	473	459	18.4
2	Meshoppen	574	470	(c)		Windham	481	431	21.7
	Meshoppen	425	387	(c)					

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.

(2) In square miles as of 1940. Areas have not been adjusted for annexation since 1940.

(a) The combined area for Braintrim township and Laceyville borough was 6.5 square miles. (b) The combined area for Clinton township and Factoryville borough was 12.7 square miles. (c) The combined area for Meshoppen township and Meshoppen borough was 16.5 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports, PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States: 1940, Areas of the United States 1940, pp. 240 and 241.



## POPULATION AND AREA FOR MUNICIPALITIES IN YORK COUNTY

(For a breakdown of areas subdivided since 1940, see Appendix A.)

No. (1)	Name (1)	Population		Land area (2) (square miles)	No. (1)	Name (1)	Population		Land area (2) (square miles)
		1950	1960				1950	1960	
	York County, total	202,737	238,336	914					
	Carroll	1,002	1,558	15.5		Monaghan	910	943	12.8
	Chanceford	2,569	2,665	(a)	32	Mount Wolf	1,164	1,514	(a)
	Codorus	2,168	2,394	(b)	15	New Freedom	1,271	1,395	2.2
	Conewago	1,877	2,992	25.0	6	New Salem	333	350	(l)
20	Cross Roads	178	166	(d)		Newberry	2,998	4,045	(k)
24	Dallastown	3,304	3,615	1.0		North Codorus	2,787	3,325	(l)
19	Delta	840	822	(n)		North Hopewell	920	986	(m)
1	Dillsburg	1,146	1,322	0.5	31	North York	2,445	2,290	0.2
4	Dover	809	975	(c)		Paradise	1,476	1,778	19.8
	Dover	3,864	6,399	(c)		Peach Bottom	1,362	1,325	(n)
	East Hopewell	807	784	(d)		Penn	5,263	7,063	13.7
	East Manchester	1,784	2,253	(e)	14	Railroad	300	273	(o)
27	East Prospect	500	623	(j)	23	Red Lion	5,119	5,594	0.8
	Fairview	5,514	6,530	35.6	10	Seven Valleys	437	515	(p)
	Fawn	1,326	1,276	(f)	16	Shrewsbury	787	943	(o)
18	Fawn Grove	397	409	(f)		Shrewsbury	2,163	2,471	(o)
22	Felton	429	430	(a)		Springettsbury	5,537	14,232	16.7
	Franklin	958	1,179	(g)		Springfield	1,467	1,751	(p)
2	Franklintown	328	287	(g)		Spring Garden	8,338	11,387	7.1
13	Glen Rock	1,477	1,546	0.5	7	Spring Grove	1,238	1,675	0.3
35	Goldsboro	558	542	(k)	17	Stewartstown	1,133	1,164	(i)
30	Hallam	976	1,234	(h)		Warrington	1,806	2,041	(q)
8	Hanover	14,048	15,538	3.2		Washington	1,066	1,200	27.7
	Heidelberg	1,138	1,493	14.9	3	Wellsville	309	320	(q)
	Hellam	2,081	2,550	(h)		West Manchester	5,438	9,505	20.0
	Hopewell	1,305	1,330	(i)		West Manheim	1,535	1,776	20.0
	Jackson	2,548	2,749	23.5	5	West York	5,756	5,526	0.5
11	Jacobus	706	968	(p)	26	Windsor	1,126	1,029	0.7
9	Jefferson	449	447	(b)		Windsor	3,351	4,751	27.7
36	Lewisberry	299	314	(k)	21	Winterstown	298	349	(m)
12	Loganville	569	742	(p)	29	Wrightsville	2,104	2,345	0.3
	Lower Chanceford	1,582	1,583	42.3	25	Yoe	681	731	(r)
	Lower Windsor	2,934	3,424	(j)	1	Yoe City	59,953	54,504	4.1
33	Manchester	1,264	1,454	0.5		York	4,502	8,506	(r)
	Manchester	3,397	5,519	16.4	28	Yorkana	229	251	(j)
	Manheim	1,259	1,435	22.8	34	York-Haven	743	736	(k)

(1) As explained in the key on the map diagram, boroughs are identified by Arabic numerals and cities are depicted by Roman numerals.  
(2) In square miles as of 1940. Areas have not been adjusted for annexations since 1940.

(a) The combined area for Chanceford township and Felton borough was 50.1 square miles. (b) The combined area for Codorus township and Jefferson borough was 34.1 square miles. (c) The combined area for Dover township and Dover borough was 43.1 square miles. (d) The combined area for East Hopewell township and Cross Roads borough was 22.4 square miles. (e) The combined area for East Manchester township and Mount Wolf borough was 17.9 square miles. (f) The combined area for Fawn township and Fawn Grove borough was 28.5 square miles. (g) The combined area for Franklin township and Franklintown borough was 18.9 square miles. (h) The combined area for Hellam township and Hallam borough was 29.6 square miles. (i) The combined area for Hopewell township and Stewartstown borough was 27.7 square miles. (j) The combined area for Lower Windsor township and East Prospect and Yorkana boroughs was 25.5 square miles. (k) The combined area for Newberry township and New Goldsboro, Lewisberry, and York Haven boroughs was 31.9 square miles. (l) The combined area for North Codorus township and New Salem borough was 32.8 square miles. (m) The combined area for North Hopewell township and Winterstown borough was 21.3 square miles. (n) The combined area for Peach Bottom township and Delta borough was 30.5 square miles. (o) The combined area for Shrewsbury township and Railroad and Shrewsbury boroughs was 31.1 square miles. (p) The combined area for Springfield township and Jacobus, Loganville, and Seven Valleys boroughs was 30.1 square miles. (q) The combined area for Warrington township and Wellsville borough was 36.4 square miles. (r) The combined area for York township and Yoe borough was 25.8 square miles.

Source: U. S. Department of Commerce, Bureau of the Census, Advance Reports (PC(A1)-40, 1960 Census of Population, Table 2, and PC(P1)-40, Table 3, and U. S. Bureau of the Census, Sixteenth Census of the United States, 1940, Areas of the United States 1940, p. 241.



APPENDIX A  
SUPPLEMENTARY AREA FIGURES  
(in square miles)

**Allegheny County:**

Aleppo 1.63; Baldwin Borough-5.44; Baldwin Township-1.02; Ben Avon Heights-0.18; Braddock-0.56; Braddock Hills-1.12; Bradford Woods-0.93; Churchill-2.26; Elizabeth Borough-0.52; Elizabeth Township-22.08; Glenfield-0.86; Haysville-0.20; Jefferson-16.90; Kilbuck-2.35; McDonald-0.23; Marshall-14.79; Osborne-0.46; Pleasant Hills-2.50; Robinson-15.57; Rosslyn Farms-0.47; Sewickley Heights-7.32; Sewickley Hills-2.53; Springdale Borough-0.99; Springdale Township-2.32; Thornburg-0.42; Trafford-0.19; Whitehall-3.19; Wilkins-2.75.

**Armstrong County:**

Applewold-0.0; Atwood-2.1; Cowanshannock-45.7; Dayton-0.2; East Franklin-32.1; Elderton-0.3; Ford Cliff-0.1; Hovey-2.4; Mahoning-25.4; Manor-17.4; Manorville-0.1; Parker City-1.2; Plumcreek-42.7; Rural Valley-2.1; South Bethlehem-0.2; Wayne-45.3; West Franklin-26.7; Worthington-0.5.

**Bucks County:**

Bedminster-31.70; Chalfont-1.51; Dublin-0.60; Durham-9.48; Falls-24.33; Hilltown-27.18; Hulmeville-0.37; Ivyland-0.35; Langhorne Manor-0.65; Middletown-19.25; Milford-28.32; New Britain Township-15.40; New Britain Borough-1.17; Penndel-0.46; Richland-21.06; Richlandtown-0.25; Riegelsville-0.62; Silverdale-0.48; Telford-0.46; Trumbauersville-0.40; Tullytown-1.86; Warminster-9.99.

**Chester County:**

Atglen-0.76; Avondale-0.48; East Fallowfield-15.66; Elverson-1.00; Honeybrook Borough-0.41; Honeybrook Township-25.00; London Grove-17.72; Modena-0.39; West Nantmeal-13.99; West Sadsbury-10.83.

**Delaware County:**

Millbourne-0.07; Nether Providence-4.64; Ridley-5.18; Rose Valley-0.74; Rutledge-0.15; Upper Darby-7.62.

**Erie County:**

Concord-34.0; Cranesville-0.90; East Springfield-3.6; Edinboro-0.8; Elgin-1.7; Elk Creek-33.0; Fairview Borough-1.2; Fairview Township-28.0; Girard-32.0; LeBoeuf-34.0; McKean-38.0; Middleboro-0.60; Mill Village-1.0; Platea-3.3; Springfield-36.0; Venango-45.0; Washington-49.0; Waterford Borough-1.1; Waterford Township-57.0; Wattsburg-0.30.

**Fayette County:**

Dawson-0.2; Georges-48.6; Henry Clay-53.8; Jefferson-20.2; Lower Tyrone-16.3; Markleysburg-0.3; Newell-0.5; Ohiopyle-0.4; Perry-20.1; Perryopolis-1.5; Smithfield-0.5; Stewart-50.4.

**Lackawanna County:**

Clarks Green-0.47; Elmhurst-1.85; Fell-15.49; Roaring Brook-21.18; South Abington-8.01; Vandling-1.39.

**Montgomery County:**

Bryn Athyn-1.90; Collegeville-1.64; Green Lane-0.31; Lower Moreland-6.77; Marlborough-12.64; Perkiomen-4.72; Red Hill-0.78; Schwenksville-0.41; Telford-0.49; Trappe-2.26; Upper Hanover-21.03; Upper Providence-18.20.

**York County:**

Chanceford-47.68; Codorus-32.92; Cross Roads-0.76; Delta-0.31; Dover Borough-0.32; Dover Township-40.59; East Hopewell-21.89; East Manchester-17.51; East Prospect-0.23; Fawn-26.5; Fawn Grove-1.31; Felton-0.41; Franklin-22.84; Franklintown-0.25; Goldsboro-0.38; Hallam-0.17; Hellam-28.37; Hopewell-26.49; Jacobus-0.75; Jefferson-0.44; Lewisberry-0.32 (approx.); Loganville-0.42 (approx.); Lower Windsor-25.00; Mt. Wolf-0.30; New Salem-0.33 (approx.); Newberry-31.12; North Codorus-33.05; North Hopewell-19.85; Peach Bottom-28.25; Railroad-0.66 (approx.); Seven Valleys-0.86 (approx.); Shrewsbury Borough-0.35 (approx.); Shrewsbury Township-30.40; Springfield-27.09; Stewartstown-0.31 (approx.); Warrington-35.96; Wellsville-0.13; Winterstown-1.38; Yoe-0.21; York Township-26.38; Yorkana-0.14; York Haven-0.33.

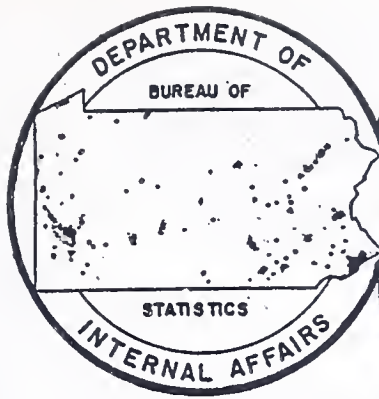
**Source:** Allegheny County, Pittsburgh Regional Planning Association; Armstrong County, Pennsylvania Economy League, Armstrong County Branch; Bucks County, Bucks County Planning Commission; Chester County, Chester County Planning Commission; Delaware County, Delaware County Planning Commission; Erie County, Erie County Planning Commission; Fayette County, Fayette County Planning and Zoning Commission; Lackawanna County, Lackawanna County Planning Commission; Montgomery County, Montgomery County Planning Commission; York County, York County Planning Commission.

## POPULATIONS BY WARD OF PITTSBURGH, ERIE, SCRANTON, AND PHILADELPHIA:

APRIL 1, 1960

Pittsburgh		Erie		Philadelphia		Philadelphia	
Ward	Population	Ward	Population	Ward	Population	Ward	Population
1	6,199	1	16,959	1	26,112	31	21,073
2	2,206	2	16,240	2	12,805	32	54,497
3	10,143	3	15,922	3	7,918	33	65,622
4	26,477	4	15,573	4	6,971	34	50,896
5	30,266	5	44,614	5	3,378	35	40,928
6	9,856	6	29,132	6	421	36	45,306
7	18,177	Total	138,440	7	17,079	37	18,738
8	17,821	Scranton		8	11,149	38	73,588
9	13,679	Ward	Population	9	1,646	39	59,203
10	25,125	1	4,904	10	4,650	40	57,507
11	23,432	2	7,169	11	1,850	41	64,956
12	23,767	3	2,088	12	3,426	42	53,563
13	26,923	4	6,324	13	7,219	43	42,233
14	47,301	5	6,508	14	10,343	44	36,459
15	29,946	6	2,730	15	35,988	45	30,323
16	23,300	7	1,558	16	5,221	46	80,623
17	13,011	8	490	17	6,890	47	31,233
18	18,907	9	5,596	18	15,285	48	34,439
19	47,187	10	6,305	19	33,668	49	51,234
20	24,837	11	3,355	20	32,385	50	86,026
21	15,458	12	4,388	21	42,761	51	42,822
22	11,074	13	5,829	22	64,982	52	52,246
23	10,038	14	2,259	23	46,800	53	27,377
24	11,382	15	4,942	24	57,987	54	26,609
25	14,298	16	1,265	25	31,917	55	32,482
26	23,401	17	7,661	26	44,486	56	45,852
27	23,489	18	1,022	27	23,621	57	34,460
28	14,453	19	8,559	28	50,616	58	33,968
29	16,604	20	8,226	29	28,250	59	48,898
30	7,353	21	7,904	30	23,527	Total	2,002,512
31	8,095	22	3,418				
32	10,127	23	6,884				
Total	604,332	24	2,059				
		Total	111,443				

Source: Figures released by the U. S. Bureau of the Census to the Pennsylvania Department of Internal Affairs, Bureau of Statistics for analytic use.



EMPLOYMENT STATISTICS IN  
PENNSYLVANIA FOR SELECTED  
YEARS: 1919-1961

DEPARTMENT OF  
INTERNAL AFFAIRS  
Genevieve Blatt, Secretary

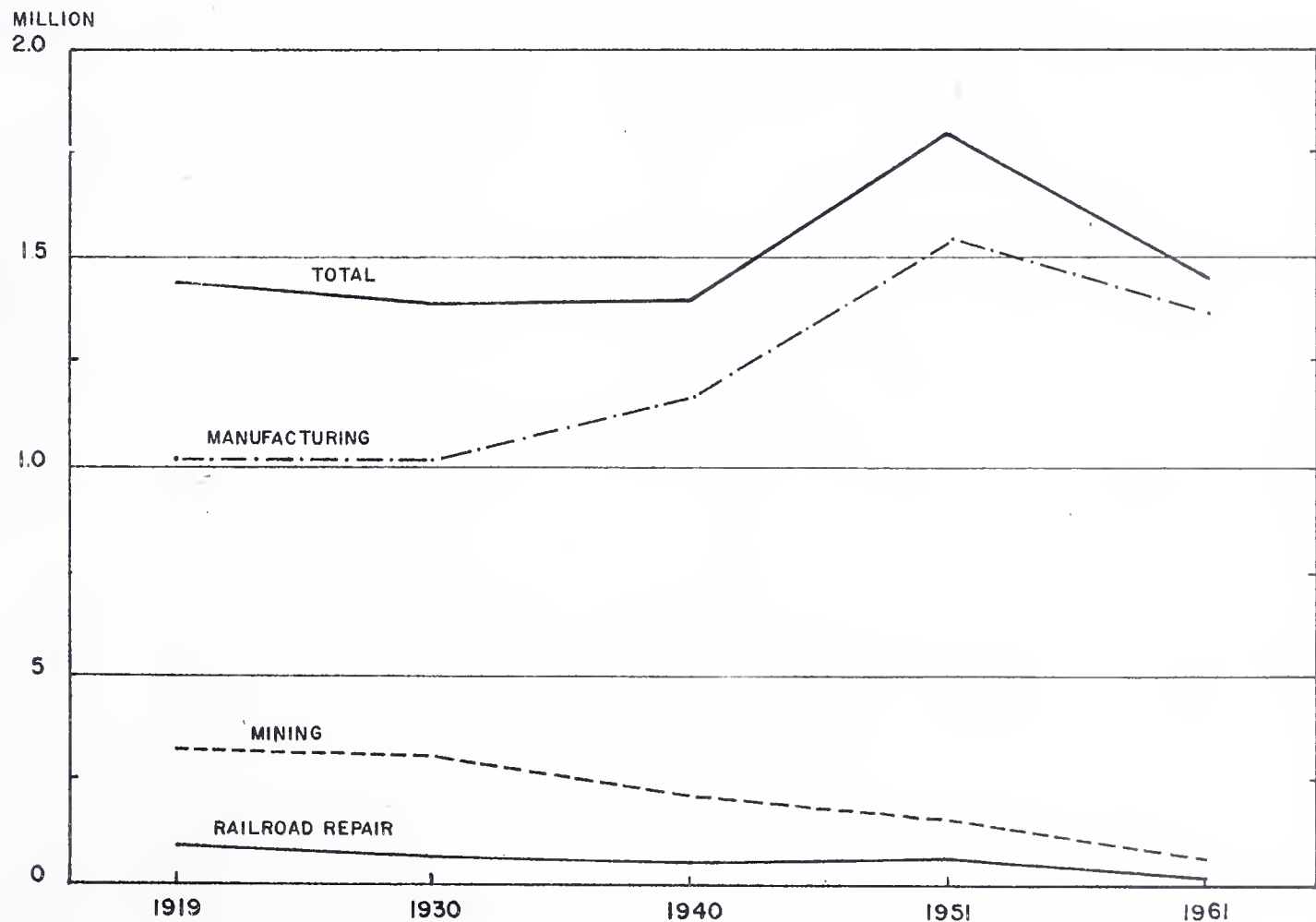
BUREAU OF STATISTICS  
Emmett Welch, Director  
Elmer Lorson, Asst. Director

APRIL 1963

SPECIAL RELEASE S-10

## EMPLOYMENT BY BROAD INDUSTRY GROUPS AND BY COUNTY FOR SELECTED YEARS: 1919-1961

### NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES FOR SELECTED YEARS: 1919 to 1961





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- |  |   |
|--|---|
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| 2. Housing   | 16. Elections, Legislation, and Legislators |
| 3. Education   | 17. State Government                        |
| 4. Climate   | 18. Local Government                        |
| 5. Parks and Recreation  | 19. Prices                                  |
| 6. Natural Resources and Conservation                              | 20. Labor Force, Employment, and Earnings   |
| 7. Vital Statistics  | 21. Agriculture                             |
| 8. Accidents   | 22. Mineral Industries                      |
| 9. Hospitals, Medical Care, and Rehabilitation                     | 23. Construction                            |
| 10. Mental Health  | 24. Manufacturing                           |
| 11. Welfare Services and Resources                                 | 25. Transportation                          |
| 12. Social Insurance, Financial Assistance, and Veterans' Benefits | 26. Communications and Public Utilities     |
| 13. Courts and Law   | 27. Business and Trade                      |
| 14. Crime and Law Enforcement                                      | 28. Banking and Finances                    |
|  | 29. Foreign Commerce                        |

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### 2. THE 1962 INDUSTRIAL DIRECTORY OF THE COMMONWEALTH OF PENNSYLVANIA (16th Edition)

Based on 1960 information. County Section-The names of all manufacturing establishments are listed alphabetically by four-digit Standard Industrial Classification (Revised SIC). In addition to the office mailing address for each establishment, the political subdivision or place name identifying the location of the plant, and the number of employees for each plant are included in this section. Industry Section-This section includes an alphabetical listing of all manufacturers by four-digit industrial classifications. The county location of each individual plant is included in addition to the office address for each company. 481 pages. Price \$7.50 plus 30¢ state sales tax.

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The names, addresses, dates of incorporation, and dates and amounts of bond issues for all municipal authorities in Pennsylvania for 1959-1960. Price \$1.00 plus 4¢ state sales tax.

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County map diagrams showing municipalities with areas in square miles and 1950 and 1960 Census population figures. Ward population figures are given for Philadelphia, Pittsburgh, Erie, and Scranton. 70 pages. Price \$1.00 plus 4¢ state sales tax.

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### 5. MANUFACTURING STATISTICS

(Based on the annual Pennsylvania Industrial Census.)

- M-1 1961 Statistics for Manufacturing Industries in Pennsylvania (1958 and 1960 reports also available)
- M-2 1961 Statistics By Major Industry Group for Counties and Urban Places (1957 report also available)
- M-3 1961 Statistics for Urbanized Areas (1956, 1957, 1958, 1959, and 1960 reports also available)
- M-4 1961 General Statistics By Industry and By Size of Establishment (1957, 1958, 1959, and 1960 reports also available)
- FT-60 Exports By Pennsylvania Manufacturing Companies; 1960
- MC-61 1961 County Industry Reports (Separate report for each county; includes data for political subdivisions covering 1961 manufacturing statistics for individual industries.)

### 6. PUBLIC UTILITY STATISTICS

(Based on the annual Census of Public Utilities in Pennsylvania)

- U-1 Statistics for Electric Utilities in Pennsylvania, 1961 (1956, 1957, 1958, 1959, and 1960 reports also available)
- U-2 Statistics for Gas Utilities in Pennsylvania, 1961 (1956, 1957, 1958, 1959, and 1960 reports also available)
- U-3 Statistics for Telephone Utilities in Pennsylvania, 1961 (1956, 1957, 1958, 1959, and 1960 reports also available)
- U-4 Statistics for Water Utilities Including Water Authorities in Pennsylvania, 1961 (1956, 1957, 1958, 1959, and 1960 reports also available)
- U-5 Statistics for Sewer Authorities in Pennsylvania, 1961 (1956, 1957, 1958, 1959, and 1960 reports also available)
- U-6 Statistics for Motor Bus and Electric Transportation Companies in Pennsylvania, 1961 (1956, 1958, 1959, and 1960 reports also available)

### 7. MUNICIPAL AUTHORITY STATISTICS

- A-1 1958 Statistics for Municipal Authorities
- A-59 1959 Statistics for Municipal Authorities
- A-60 1960 Statistics for Municipal Authorities
- A-61 1961 Statistics for Municipal Authorities

### 8. SPECIAL RELEASES

- S-1 Leading Manufacturing Counties in Pennsylvania
- S-2 Industrial Statistics for Pennsylvania, 1951 to 1955
- S-3 Industrial Statistics for Pennsylvania, 1916 to 1956
- S-4 Capital Investment for Manufacturing and Mining Industries in Pennsylvania, 1956
- S-5 Mineral Statistics for Pennsylvania, 1957
- S-7 Mineral Statistics for Pennsylvania, 1958-1959
- S-8 Re-apportionment in Pennsylvania
- Economic Base Studies for Urban Planning and Development in Pennsylvania (A description and evaluation of such studies in Pennsylvania--by Morris Hamburg, University of Pennsylvania)

## OUT OF PRINT PUBLICATIONS

These out of print publications are listed because copies of many of these reports are available for reference in public, university, and college libraries.

### PENNSYLVANIA PRODUCTIVE INDUSTRIES

These publications include information on manufacturing, public utilities, and mineral industries for the years 1916 to 1950.

### SUPPLEMENTS TO THE 1959 INDUSTRIAL DIRECTORY (Two editions)

These supplements contain information for 1958 and for 1959 on new establishments, companies terminating operations, plants changing locations, company name changes, and changes in industry codes.

### 1959 ALPHABETICAL DIRECTORY TO INDUSTRIAL ESTABLISHMENTS

This report is a supplement to the 1959 Industrial Directory. All manufacturing plants and establishments producing minerals other than fuels in Pennsylvania in 1957 are listed alphabetically, and the four-digit industrial classification (SIC) is given for each establishment. 43 pages.

### DIRECTORY OF PENNSYLVANIA MANUFACTURING EXPORTERS: 1960

This directory is a listing of all Pennsylvania manufacturing companies exporting in 1960, their plant addresses, and a listing of products exported by each.

### Index of Statistical Sources for Pennsylvania (Editions in 1955, 1957, 1959, 1960, and 1961)

- P-1 County and City Population Estimates for Pennsylvania
- P-2 County Population Estimates for Pennsylvania by Age and Sex
- P-3 County Population Estimates--Notes on Methodology
- P-4 Local Population Estimates in Pennsylvania
- S-6 Manufacturing Employment in Urban, Suburban, and Rural Places in Pennsylvania, 1960
- 56-5 Shifts in the Geographic Location of Pennsylvania Industry, 1920-1955
- 57-3 Industry Change in Pennsylvania, 1954-1955

EMPLOYMENT BY BROAD INDUSTRY GROUPS AND BY COUNTY FOR SELECTED YEARS: 1919 - 1961

CONTENTS

	<u>Page</u>
Introduction, Definitions, and Explanations .....	4
Table 1: Number of Employees in Pennsylvania Industries, by County: 1919 .....	5
Table 2: Number of Employees in Pennsylvania Industries, by County: 1930 .....	8
Table 3: Number of Employees in Pennsylvania Industries, by County: 1940 .....	11
Table 4: Number of Employees in Pennsylvania Industries, by County: 1951 .....	14
Table 5: Number of Employees in Pennsylvania Industries, by County: 1956 .....	17
Table 6: Number of Employees in Pennsylvania Industries, by County: 1957 .....	20
Table 7: Number of Employees in Pennsylvania Industries, by County: 1958 .....	23
Table 8: Number of Employees in Pennsylvania Industries, by County: 1959 .....	26
Table 9: Number of Employees in Pennsylvania Industries, by County: 1960 .....	29
Table 10: Number of Employees in Pennsylvania Industries, by County: 1961 .....	32

## INTRODUCTION, DEFINITIONS, AND EXPLANATIONS

This report presents comparable historical data on industrial employment by counties. It shows total county figures for employment in manufacturing, mining, and railroad repair shops for 1919, 1930, 1940, 1951, and 1956 to date. Previously these data have been available for individual years from 1919 to 1950 in the Productive Industry Reports of the Bureau of Statistics; for the years 1951 to 1955 in a special release of the Bureau of Statistics titled Industrial Statistics for Pennsylvania, 1951 to 1955, which is now out of print; and for the years since 1956 in the annual M-releases. Historical county series of the Bureau of Statistics industrial census employment data could be obtained only by compilation from these various sources. Furthermore, because of changes in the industrial classification systems at various times, the data by broad industry groups were not comparable for various time periods. In this report all the data from 1956 back to 1919 have been revised to conform to the 1957 Standard Industrial Classification of the U. S. Bureau of the Budget which is in current use.

For the years up to 1957 all mining employment was obtained from the Census of Mineral Industries conducted by the Department of Internal Affairs. Since 1957 coal mining has been excluded from the scope of the Mineral Industries Census. Employment figures for the coal mining industry for the years 1958 to 1960 were obtained from the Annual Report of the Bureau of Mines.

In 1961 all mineral industries reporting was discontinued by the Department of Internal Affairs. Mining employment figures for that year were obtained from the First Quarter Report of the Bureau of Employment Security, Department of Labor and Industry.



TABLE 1: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1919

County	Total employed	Mines and quarries	Railroad repair shops	Total manufacturing	Food and kindred products	Tobacco manufactures	Textile mill products	Apparel and related products
Total	1, 423, 058	315, 766	74, 178	1, 033, 114	54, 334	30, 502	118, 680	86, 295
Adams	2, 051	72	-	1, 979	464	529	119	105
Allegheny	197, 001	15, 576	12, 302	169, 123	11, 158	1, 607	231	1, 864
Armstrong	10, 757	5, 926	43	4, 788	103	-	45	-
Beaver	21, 058	208	199	20, 651	123	-	-	25
Bedford	2, 684	1, 139	178	1, 367	157	195	2	-
Berks	41, 905	336	4, 023	37, 546	1, 570	1, 967	3, 235	11, 387
Blair	19, 911	1, 027	9, 523	9, 361	389	1	1, 062	184
Bradford	4, 678	4	1, 951	2, 723	199	17	202	-
Bucks	15, 834	113	757	14, 964	150	1, 768	1, 952	524
Butler	8, 423	2, 065	323	6, 035	120	-	-	198
Cambria	35, 851	19, 554	1, 066	15, 231	421	147	317	73
Cameron	711	-	129	582	11	1	-	-
Carbon	11, 566	5, 459	882	5, 225	90	104	1, 438	54
Centre	3, 351	1, 594	72	1, 685	133	-	-	153
Chester	11, 634	156	362	11, 116	681	4	492	683
Clarion	2, 941	1, 798	198	945	27	23	-	59
Clearfield	15, 343	10, 909	1, 093	3, 341	122	2	-	143
Clinton	5, 602	391	2, 672	2, 539	117	8	210	147
Columbia	7, 112	1, 300	60	5, 752	55	-	1, 270	160
Crawford	4, 041	-	1, 303	2, 738	203	2	38	120
Cumberland	4, 564	152	1, 174	3, 238	245	35	393	729
Dauphin	25, 631	1, 927	4, 245	19, 459	3, 091	1, 168	376	1, 737
Delaware	68, 718	125	320	68, 273	295	51	10, 276	47
Elk	6, 906	1, 191	141	5, 574	83	1	75	2
Erie	24, 164	46	1, 354	22, 764	1, 097	71	279	602
Fayette	35, 348	25, 370	174	9, 804	461	14	156	10
Forest	1, 040	16	2	1, 022	3	-	-	-
Franklin	4, 444	35	5	4, 404	75	8	288	376
Fulton	112	49	-	63	-	-	-	-
Greene	1, 488	968	10	510	14	-	-	-
Huntingdon	4, 280	1, 701	364	2, 215	54	2	275	-
Indiana	11, 839	9, 714	243	1, 882	92	-	-	14
Jefferson	7, 476	4, 834	564	2, 078	112	-	225	57
Juniata	446	-	215	231	28	-	-	179
Lackawanna	60, 775	37, 068	5, 350	18, 357	1, 161	267	9, 105	1, 792
Lancaster	23, 663	534	326	22, 803	2, 147	3, 722	4, 247	1, 741
Lawrence	13, 073	678	75	12, 320	228	1	97	188
Lebanon	10, 449	663	131	9, 655	293	705	818	1, 445
Lehigh	23, 176	517	221	22, 438	829	1, 303	7, 705	953
Luzerne	83, 632	56, 569	2, 495	24, 568	3, 021	801	10, 588	2, 201
Lycoming	12, 896	68	537	12, 291	273	54	1, 618	152
McKean	6, 328	6	398	5, 924	89	3	114	113
Mercer	16, 047	848	1, 155	14, 044	124	1	38	23
Mifflin	4, 836	436	68	4, 332	79	-	321	426
Monroe	2, 645	25	327	2, 293	151	-	629	64
Montgomery	27, 087	197	299	26, 591	649	1, 865	2, 877	3, 700
Montour	1, 637	-	6	1, 631	16	-	332	111
Northampton	33, 423	1, 796	1, 058	30, 569	498	1, 377	4, 909	2, 724
Northumberland	24, 596	13, 221	1, 421	9, 954	455	773	4, 585	1, 789
Perry	970	-	297	673	20	-	57	229
Philadelphia	264, 933	588	7, 854	256, 491	17, 862	6, 445	44, 294	41, 536
Pike	55	-	-	55	9	-	3	-
Potter	2, 233	-	334	1, 899	38	-	213	33
Schuylkill	46, 576	35, 168	1, 796	9, 612	653	205	482	4, 905
Snyder	631	-	7	624	15	5	228	163
Somerset	11, 370	10, 868	162	340	94	46	-	-
Sullivan	1, 155	831	-	324	23	10	125	-
Susquehanna	1, 731	19	1, 044	668	82	4	366	-
Tioga	2, 557	1, 132	-	1, 425	362	-	116	45
Union	992	-	37	955	105	-	205	86
Venango	6, 465	38	708	5, 719	111	2	1	18
Warren	4, 484	-	220	4, 264	152	48	-	84
Washington	36, 072	18, 801	675	16, 596	351	4	-	-
Wayne	2, 888	813	70	2, 005	73	6	337	556
Westmoreland	51, 169	20, 768	913	29, 488	736	2	118	35
Wyoming	318	20	6	292	25	1	-	3
York	25, 286	339	241	24, 706	1, 667	5, 127	1, 196	1, 548

(continued on following page)

TABLE 1: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1919  
(continued)

County	Lumber and wood products	Furniture and fixtures	Paper and allied products	Printing and publishing	Chemicals and allied products	Petroleum and related products	Rubber and plastics products	Leather and leather products
Total	21,264	12,594	22,340	25,825	22,675	14,713	4,122	32,161
Adams	39	312	-	27	6	-	-	179
Allegheny	2,112	545	750	3,392	2,590	2,534	58	295
Armstrong	32	-	-	34	3	62	-	-
Beaver	181	-	97	70	96	76	-	2
Bedford	83	1	-	14	-	-	-	68
Berks	636	51	533	400	336	4	3	1,448
Blair	125	9	1,402	160	114	-	-	-
Bradford	571	390	75	40	53	-	-	172
Bucks	234	5	219	72	59	-	410	385
Butler	54	14	-	43	-	562	-	1
Cambria	145	48	-	232	28	10	-	4
Cameron	-	-	-	3	215	-	-	73
Carbon	20	-	-	37	2,969	-	-	-
Centre	152	-	-	35	54	-	-	-
Chester	47	-	774	132	39	-	-	105
Clarion	22	-	-	17	39	31	7	-
Clearfield	108	-	31	63	15	-	-	478
Clinton	42	217	667	76	53	-	-	177
Columbia	48	120	33	22	80	-	-	256
Crawford	111	75	-	95	10	113	-	1
Cumberland	158	195	66	65	3	-	50	635
Dauphin	143	43	117	651	23	-	-	1,640
Delaware	419	95	136	93	1,155	1,080	23	77
Elk	103	-	1,486	41	235	44	-	1,137
Erie	1,279	1,095	1,422	607	19	19	701	272
Fayette	190	-	-	95	304	-	-	-
Forest	771	-	-	1	60	75	-	3
Franklin	47	-	-	87	17	-	-	155
Fulton	58	-	-	5	-	-	-	-
Greene	5	-	-	5	-	32	-	-
Huntingdon	113	-	229	107	-	-	-	80
Indiana	41	20	-	33	75	-	39	25
Jefferson	30	78	-	31	-	28	-	440
Juniata	18	-	-	6	-	-	-	-
Lackawanna	474	66	94	992	201	34	-	47
Lancaster	613	18	124	399	126	-	-	911
Lawrence	141	-	18	85	245	12	-	3
Lebanon	84	35	329	96	19	3	-	1,349
Lehigh	682	640	118	239	283	9	-	967
Luzerne	276	37	119	381	227	-	-	14
Lycoming	742	1,826	160	336	169	-	-	2,834
McKean	510	5	25	62	820	420	-	748
Mercer	147	-	-	145	26	-	-	-
Mifflin	15	-	-	25	-	-	-	-
Monroe	157	49	54	47	-	-	-	47
Montgomery	519	25	1,516	156	226	10	782	64
Montour	-	-	-	9	-	-	-	-
Northampton	189	101	246	287	587	-	-	237
Northumberland	176	157	2	76	2	-	-	35
Perry	67	-	-	10	46	-	-	96
Philadelphia	4,644	4,030	9,193	14,239	9,970	7,143	140	12,457
Pike	40	-	-	3	-	-	-	-
Potter	323	-	295	9	146	5	-	466
Schuylkill	63	-	157	150	330	-	-	1,065
Snyder	2	-	-	8	-	-	-	151
Somerset	82	-	-	26	-	-	-	-
Sullivan	44	-	-	1	46	-	-	75
Susquehanna	45	61	-	15	1	-	-	44
Tioga	157	40	-	24	2	-	-	668
Union	62	255	-	14	-	-	-	-
Venango	249	-	-	432	9	1,213	-	-
Warren	453	726	-	39	92	838	-	465
Washington	372	-	25	143	185	145	78	1
Wayne	119	-	8	15	-	127	-	97
Westmoreland	358	46	152	193	118	84	1,831	1
Wyoming	151	-	-	7	5	-	-	53
York	1,171	1,164	1,668	371	144	-	-	1,158

(continued on following page)

TABLE 1: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1919  
(continued)

County	Stone, clay, and glass products	Primary metal products	Fabricated metal products	Machinery, except electrical	Electrical machinery, equipment, and supplies	Transportation equipment	Instruments and related products	Miscellaneous manufactures
Total	53,936	217,875	73,811	47,015	31,085	118,762	8,722	36,403
Adams	175	24	-	-	-	-	-	-
Allegheny	9,669	80,776	10,283	6,909	15,784	13,940	1,240	3,386
Armstrong	2,557	1,816	53	77	-	-	-	6
Beaver	2,084	12,661	2,075	426	1,849	210	-	676
Bedford	102	745	-	-	-	-	-	-
Berks	432	7,294	3,892	1,604	19	1,392	377	966
Blair	646	824	2,509	86	-	1,846	-	4
Bradford	-	41	37	839	-	78	-	9
Bucks	116	50	117	74	-	8,388	385	56
Butler	615	1,681	448	74	-	1,968	-	257
Cambria	807	12,584	338	13	38	22	3	1
Cameron	37	122	-	26	94	-	-	-
Carbon	-	415	47	51	-	-	-	-
Centre	1,029	71	-	26	-	29	-	3
Chester	667	5,862	656	696	28	250	-	-
Clarion	714	-	-	6	-	-	-	-
Clearfield	1,896	231	3	194	-	55	-	-
Clinton	721	7	92	5	-	-	-	-
Columbia	67	77	-	60	-	3,504	-	-
Crawford	-	825	864	171	31	76	-	3
Cumberland	57	396	4	136	-	-	-	71
Dauphin	163	6,914	1,064	1,276	-	968	-	85
Delaware	233	3,601	348	1,947	-	47,216	-	1,181
Elk	1,108	58	-	198	976	27	-	-
Erie	119	4,482	3,351	1,977	4,067	284	458	563
Fayette	1,852	6,028	430	256	-	8	-	-
Forest	100	-	-	-	-	9	-	-
Franklin	33	119	24	3,155	12	-	8	-
Fulton	-	-	-	-	-	-	-	-
Greene	-	360	12	7	-	-	-	75
Huntingdon	1,055	145	128	27	-	-	-	-
Indiana	686	791	-	-	-	-	-	66
Jefferson	556	417	11	22	-	41	-	30
Juniata	-	-	-	-	-	-	-	-
Lackawanna	195	558	1,451	902	554	207	64	193
Lancaster	489	1,297	1,953	1,171	174	41	719	2,911
Lawrence	1,467	5,206	3,923	529	-	150	-	27
Lebanon	75	1,066	3,121	185	2	-	-	30
Lehigh	2,356	2,556	1,603	646	7	1,499	32	11
Luzerne	176	2,093	1,460	1,280	1	1,363	30	500
Lycoming	40	397	986	1,275	-	1,392	-	37
McKean	1,879	185	478	207	113	4	-	149
Mercer	147	10,346	1,021	692	-	470	-	864
Mifflin	1	485	119	41	-	2,820	-	-
Monroe	103	124	762	36	-	-	-	70
Montgomery	1,207	6,643	2,926	1,292	19	1,075	100	940
Montour	-	1,043	120	-	-	-	-	-
Northampton	4,322	3,709	266	1,337	525	670	86	8,499
Northumberland	197	301	772	145	-	466	-	23
Perry	-	148	-	-	-	-	-	-
Philadelphia	3,079	5,245	15,749	12,266	5,246	26,476	4,217	12,260
Pike	-	-	-	-	-	-	-	-
Potter	280	-	-	41	-	-	50	-
Schuylkill	46	1,231	70	246	-	-	-	9
Snyder	52	-	-	-	-	-	-	-
Somerset	57	9	-	7	14	5	-	-
Sullivan	-	-	-	-	-	-	-	-
Susquehanna	-	13	1	30	-	6	-	-
Tioga	-	-	4	4	-	-	-	3
Union	51	-	1	15	-	160	-	1
Venango	2	417	155	848	-	139	-	2,123
Warren	139	151	637	129	-	278	-	33
Washington	5,134	7,705	1,756	61	512	101	3	20
Wayne	464	-	11	192	-	-	-	-
Westmoreland	3,136	15,032	5,997	295	882	424	-	48
Wyoming	-	-	47	-	-	-	-	-
York	546	2,498	1,636	2,805	138	705	950	214



TABLE 2: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1930

County	Total employed	Mines and quarries	Railroad repair shops	Total manufacturing	Food and kindred products	Tobacco manufactures	Textile mill products	Apparel and related products
Total	1,393,346	300,139	55,783	1,037,424	75,803	27,227	144,689	114,933
Adams	4,305	250	1	4,054	970	397	253	344
Allegheny	191,825	15,550	9,670	166,605	16,892	575	563	2,243
Armstrong	9,158	4,872	25	4,261	142	1	-	108
Beaver	26,490	406	942	25,142	441	-	-	51
Bedford	1,506	850	123	533	153	1	-	208
Berks	48,603	488	3,856	44,259	2,499	789	2,853	19,788
Blair	19,319	873	11,129	7,317	801	-	1,507	95
Bradford	4,044	1	1,586	2,457	166	-	419	603
Bucks	11,594	440	253	10,901	315	622	1,446	3,737
Butler	7,665	1,857	143	5,665	237	8	-	338
Cambria	33,173	18,752	588	13,833	932	56	381	449
Cameron	896	7	44	845	3	-	-	-
Carbon	12,234	5,966	717	5,551	155	-	1,497	781
Centre	3,577	1,179	38	2,360	242	-	234	230
Chester	12,247	241	120	11,886	953	2	669	1,764
Clarion	2,676	1,651	55	970	80	3	-	46
Clearfield	10,508	5,887	739	3,882	151	-	447	192
Clinton	4,265	188	1,251	2,826	111	-	828	57
Columbia	6,647	1,046	22	5,579	168	-	2,241	449
Crawford	5,098	26	1,400	3,672	326	1	421	12
Cumberland	6,506	255	1,245	5,006	532	21	924	999
Dauphin	22,426	2,482	2,159	17,785	3,207	666	38	2,418
Delaware	37,703	190	307	37,206	678	19	8,625	56
Elk	6,011	1,505	181	4,325	57	1	69	2
Erie	25,897	90	747	25,060	1,256	12	278	469
Fayette	26,390	20,416	927	5,047	475	28	168	245
Forest	490	-	2	488	6	-	-	-
Franklin	6,214	99	146	5,969	359	-	379	1,324
Fulton	195	-	-	195	N.A.	N.A.	N.A.	N.A.
Greene	4,245	4,084	2	159	54	1	-	-
Huntingdon	4,028	1,083	65	2,880	118	2	705	191
Indiana	10,794	8,475	77	2,242	187	1	199	98
Jefferson	5,004	2,616	374	2,014	309	-	446	123
Juniata	477	-	-	477	8	-	-	165
Lackawanna	58,513	38,370	3,265	16,878	1,393	192	8,404	1,952
Lancaster	26,861	505	82	26,274	2,574	2,421	4,160	3,066
Lawrence	13,938	1,131	807	12,000	306	-	-	97
Lebanon	11,352	824	69	10,459	792	370	1,430	2,530
Lehigh	27,759	660	330	26,769	1,464	1,372	9,822	2,147
Luzerne	89,829	62,912	1,613	25,304	2,275	2,339	11,961	3,520
Lycoming	12,445	197	331	11,917	536	2	1,853	121
McKean	5,020	11	68	4,941	127	-	241	303
Mercer	12,790	409	1,004	11,377	253	-	15	12
Mifflin	7,628	194	68	7,366	186	-	4,899	88
Monroe	2,174	64	73	2,037	64	-	821	251
Montgomery	33,118	336	189	32,593	1,457	169	3,688	7,186
Montour	1,370	23	1	1,346	31	-	383	212
Northampton	32,943	2,074	960	29,909	771	794	4,788	4,689
Northumberland	22,624	11,933	490	10,201	734	404	5,302	1,552
Perry	688	-	4	684	42	-	116	281
Philadelphia	273,431	653	3,989	268,789	23,687	8,441	56,922	37,454
Pike	124	20	-	104	9	-	54	1
Potter	930	-	204	726	49	-	113	1
Schuylkill	46,534	33,306	1,310	11,918	1,067	240	857	6,698
Snyder	997	1	4	992	26	-	618	80
Somerset	10,696	9,587	119	990	151	22	-	353
Sullivan	731	598	-	133	50	-	50	-
Susquehanna	1,986	746	632	608	57	1	196	98
Tioga	2,087	452	-	1,635	163	-	104	-
Union	953	-	50	903	71	-	230	139
Venango	6,128	137	247	5,744	209	-	-	7
Warren	4,290	18	44	4,228	142	35	12	24
Washington	32,664	17,877	435	14,352	435	1	-	22
Wayne	2,561	536	16	2,009	86	-	902	525
Westmoreland	43,738	14,189	325	29,224	743	8	-	252
Wyoming	452	67	-	385	33	-	-	-
York	33,782	484	120	33,178	2,837	7,210	1,158	3,687

(continued on following page)

TABLE 2: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1930  
(continued)

County	Lumber and wood products	Furniture and fixtures	Paper and allied products	Printing and publishing	Chemicals and allied products	Petroleum and related products	Rubber and plastics products	Leather and leather products
Total	16,507	13,195	23,131	46,438	20,475	16,143	3,443	26,513
Adams	160	568	-	47	8	-	96	795
Allegheny	1,191	876	934	6,412	2,776	2,089	21	186
Armstrong	22	4	-	59	-	1	-	9
Beaver	176	3	77	155	109	202	3	-
Bedford	100	1	-	29	2	-	-	-
Berks	500	192	665	702	378	6	-	728
Blair	91	10	1,331	339	165	9	-	-
Bradford	195	77	74	76	62	-	-	24
Bucks	204	4	358	186	396	-	370	466
Butler	140	-	-	91	238	346	56	11
Cambria	133	47	-	287	383	-	-	-
Cameron	-	-	-	5	126	-	-	55
Carbon	28	-	-	67	-	-	-	-
Centre	87	-	-	60	169	-	-	-
Chester	179	65	993	195	63	-	-	12
Clarion	43	-	-	33	-	7	72	-
Clearfield	74	11	53	105	13	-	4	412
Clinton	-	179	701	71	93	-	-	238
Columbia	45	-	-	66	14	-	-	64
Crawford	109	51	-	113	15	206	-	-
Cumberland	62	104	153	107	11	-	246	1,041
Dauphin	247	64	81	1,328	254	66	-	879
Delaware	344	93	662	305	371	2,942	23	130
Elk	211	15	854	43	66	3	-	666
Erie	596	702	1,651	765	114	73	554	191
Fayette	149	-	73	189	186	-	-	-
Forest	198	-	-	5	69	16	-	122
Franklin	120	203	32	117	5	-	-	111
Fulton	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Greene	5	-	-	25	-	33	-	-
Huntingdon	57	-	253	127	-	-	-	9
Indiana	51	-	-	80	-	-	24	114
Jefferson	20	60	-	60	-	-	-	-
Juniata	-	-	-	5	-	-	-	-
Lackawanna	204	259	11	1,284	168	-	-	5
Lancaster	945	105	326	769	234	-	-	1,388
Lawrence	76	1	-	124	105	-	-	-
Lebanon	124	14	400	155	34	-	42	1,029
Lehigh	596	537	120	550	408	-	9	257
Luzerne	269	199	77	960	252	-	5	7
Lycoming	602	1,075	1,061	443	137	-	18	2,563
McKean	362	13	-	161	495	533	-	449
Mercer	63	-	-	210	51	-	-	-
Mifflin	87	-	-	65	-	-	-	-
Monroe	36	5	37	279	23	-	-	50
Montgomery	482	113	1,198	428	243	66	829	236
Montour	-	-	-	16	-	-	-	-
Northampton	251	99	105	1,225	661	-	-	-
Northumberland	312	87	59	239	12	-	26	-
Perry	32	-	-	16	-	-	-	72
Philadelphia	3,438	4,284	8,547	24,767	10,252	7,143	176	10,749
Pike	37	-	-	3	-	-	-	-
Potter	68	23	185	23	70	-	-	136
Schuylkill	106	5	110	272	489	-	-	840
Snyder	37	-	-	20	10	-	-	97
Somerset	314	-	-	66	14	-	-	-
Sullivan	6	22	-	3	2	-	-	-
Susquehanna	144	39	-	31	-	-	-	-
Tioga	203	-	-	42	54	-	-	709
Union	240	161	-	24	-	-	-	-
Venango	131	-	-	426	24	1,686	-	-
Warren	460	897	-	102	82	711	-	186
Washington	29	-	-	182	42	5	-	2
Wayne	120	-	10	31	61	-	-	37
Westmoreland	186	12	52	371	235	-	860	-
Wyoming	34	-	-	15	4	-	-	293
York	976	1,915	1,888	882	227	-	9	1,145

N.A. - Not available.

(continued on following page)

TABLE 2: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1930  
(continued)

County	Stone, clay, and glass products	Primary metal products	Fabricated metal products	Machinery, except electrical	Electrical machinery, equipment, and supplies	Transportation equipment	Instruments and related products	Miscellaneous manufactures
Total	53,926	134,140	128,639	53,481	52,118	56,293	11,178	19,152
Adams	229	51	134	1	-	1	-	-
Allegheny	7,682	47,537	31,182	5,781	21,638	14,350	1,744	1,933
Armstrong	2,652	992	71	126	-	-	-	74
Beaver	2,805	12,276	6,355	432	1,333	313	-	411
Bedford	3	-	8	-	-	-	-	28
Berks	760	2,044	5,498	4,295	41	1,111	323	1,087
Blair	690	98	612	68	-	1,474	26	1
Bradford	-	43	28	615	-	63	12	-
Bucks	571	126	249	75	6	1,274	496	-
Butler	844	1,646	462	323	16	907	-	2
Cambria	820	7,915	1,934	275	13	111	16	81
Cameron	-	-	-	-	656	-	-	-
Carbon	10	2,933	32	-	-	-	47	1
Centre	1,103	-	169	66	-	-	-	-
Chester	462	3,534	2,380	542	-	69	-	4
Clarion	676	-	-	10	-	-	-	-
Clearfield	2,041	99	44	219	13	4	-	-
Clinton	386	-	42	8	66	44	-	2
Columbia	99	-	57	32	-	2,340	-	4
Crawford	18	396	840	166	6	80	-	912
Cumberland	50	389	65	130	-	63	-	109
Dauphin	265	881	5,917	1,271	-	48	40	115
Delaware	402	3,531	1,323	3,347	17	13,186	-	1,152
Elk	1,120	25	54	51	1,071	17	-	-
Erie	176	3,091	4,372	2,130	6,672	520	813	625
Fayette	1,642	1,157	491	183	-	10	-	51
Forest	72	-	-	-	-	-	-	-
Franklin	35	13	51	3,112	29	59	-	20
Fulton	-	-	-	-	-	-	-	195
Greene	22	-	-	19	-	-	-	-
Huntingdon	1,235	2	128	4	-	3	-	46
Indiana	912	172	395	-	-	9	-	-
Jefferson	863	8	6	42	12	6	-	59
Juniata	-	-	-	-	-	-	-	299
Lackawanna	94	200	1,155	489	726	114	33	195
Lancaster	742	1,026	2,162	1,096	248	51	1,229	3,732
Lawrence	2,507	4,227	3,985	490	18	6	-	58
Lebanon	134	1,185	2,107	99	-	14	-	-
Lehigh	1,825	278	3,064	1,476	98	2,698	19	29
Luzerne	170	31	1,480	923	6	715	100	15
Lycoming	61	15	1,320	459	-	1,628	-	23
McKean	984	58	219	974	-	8	-	14
Mercer	10	4,395	2,495	1,115	2,420	290	-	48
Mifflin	183	169	60	111	-	1,517	-	1
Monroe	37	46	316	72	-	-	-	-
Montgomery	1,961	3,615	6,895	1,528	212	1,689	1	597
Montour	-	585	119	-	-	-	-	-
Northampton	4,379	6,663	3,034	1,245	332	557	14	302
Northumberland	247	160	566	93	-	353	3	52
Perry	-	-	79	-	-	46	-	-
Philadelphia	3,081	4,685	16,762	12,848	15,454	8,204	5,339	6,556
Pike	-	-	-	-	-	-	-	-
Potter	-	-	-	1	-	-	57	-
Schuylkill	80	5	923	133	-	45	6	41
Snyder	98	-	-	6	-	-	-	-
Somerset	63	-	-	7	-	-	-	-
Sullivan	-	-	-	-	-	-	-	-
Susquehanna	-	-	2	30	10	-	-	-
Tioga	236	-	110	7	7	-	-	-
Union	9	27	2	-	-	-	-	-
Venango	99	21	943	1,747	-	451	-	-
Warren	203	654	538	26	7	149	-	-
Washington	4,033	6,281	3,004	182	-	134	-	-
Wayne	21	-	11	205	-	-	-	-
Westmoreland	3,364	10,329	10,583	796	615	479	176	163
Wyoming	3	-	3	-	-	-	-	-
York	657	526	3,803	4,000	376	1,083	684	115



TABLE 3: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1940

County	Total employed	Mines and quarries	Railroad repair shops	Total manufacturing	Food and kindred products	Tobacco manufactures	Textile mill products	Apparel and related products
Total	1,397,508	202,541	41,547	1,153,420	96,307	19,057	109,900	158,141
Adams	5,932	176	3	5,753	1,956	261	-	1,021
Allegheny	203,003	12,583	7,908	182,512	17,750	278	818	1,790
Armstrong	9,933	4,528	11	5,394	864	-	-	1
Beaver	33,445	399	999	32,047	369	-	28	17
Bedford	965	641	49	275	108	-	-	2
Berks	50,570	284	1,841	48,445	2,931	249	3,369	22,257
Blair	18,559	653	11,486	6,420	1,240	-	1,163	339
Bradford	4,046	-	1,276	2,770	118	-	420	874
Bucks	15,143	312	1	14,830	581	120	1,867	5,226
Butler	8,492	1,154	49	7,289	229	-	-	168
Cambria	39,372	20,101	445	18,826	1,094	35	249	1,362
Cameron	2,269	5	22	2,242	1	-	-	-
Carbon	12,062	5,381	197	6,484	222	-	1,256	1,304
Centre	4,042	1,063	12	2,967	249	-	36	462
Chester	14,491	98	132	14,261	1,509	-	855	1,741
Clarion	2,578	1,426	38	1,114	76	1	-	-
Clearfield	9,564	4,717	673	4,174	180	-	168	481
Clinton	5,537	98	980	4,459	157	-	802	2
Columbia	8,680	320	6	8,354	846	-	2,696	1,028
Crawford	9,921	30	675	9,216	495	-	1,991	66
Cumberland	8,192	193	1,513	6,486	642	15	1,376	2,076
Dauphin	23,563	1,254	1,123	21,186	5,035	428	6	3,328
Delaware	37,231	103	226	36,902	876	-	6,623	267
Elk	5,844	1,161	88	4,595	112	-	-	1
Erie	29,855	45	493	29,317	1,665	4	-	236
Fayette	24,538	18,753	506	5,279	806	30	49	401
Forest	463	-	5	458	1	-	-	-
Franklin	8,656	102	119	8,435	1,076	-	181	2,396
Fulton	282	259	-	23	17	-	-	-
Greene	4,448	4,300	-	148	63	-	-	-
Huntingdon	3,871	1,202	55	2,614	85	-	360	310
Indiana	8,202	7,182	38	982	172	-	-	56
Jefferson	4,001	2,127	246	1,628	335	-	33	176
Juniata	817	17	-	800	163	-	35	413
Lackawanna	30,307	12,951	2,030	15,326	1,960	443	5,056	4,166
Lancaster	34,241	254	56	33,931	3,484	1,490	3,643	6,474
Lawrence	13,409	1,049	704	11,656	233	-	-	505
Lebanon	14,202	815	60	13,327	938	73	744	3,962
Lehigh	28,630	350	98	28,182	1,890	942	5,755	6,866
Luzerne	64,394	39,937	715	23,742	3,276	1,991	7,554	5,477
Lycoming	13,042	172	194	12,676	688	-	1,922	953
McKean	5,103	24	5	5,074	145	-	-	520
Mercer	14,651	109	720	13,822	314	-	5	9
Mifflin	7,054	186	27	6,841	218	-	4,066	440
Monroe	2,460	48	38	2,374	90	-	786	263
Montgomery	43,912	470	122	43,320	1,914	18	5,014	10,369
Montour	767	30	-	737	22	-	35	137
Northampton	44,056	1,475	479	42,102	1,526	1	5,142	8,793
Northumberland	16,673	6,869	152	9,652	969	440	1,805	3,341
Perry	650	20	-	630	107	-	50	257
Philadelphia	277,547	188	2,933	274,426	29,110	8,583	40,648	44,017
Pike	115	-	-	115	9	-	63	1
Potter	1,228	-	29	1,199	49	-	-	174
Schuylkill	27,230	14,950	738	11,542	1,106	3	375	7,156
Snyder	1,138	20	-	1,118	32	-	457	394
Somerset	7,454	6,515	90	849	353	3	-	163
Sullivan	287	130	-	157	85	-	62	-
Susquehanna	998	261	346	391	46	2	-	79
Tioga	3,072	314	-	2,758	165	-	-	-
Union	1,106	46	58	1,002	110	-	180	303
Venango	5,159	36	83	5,040	157	-	-	3
Warren	4,041	18	29	3,994	205	-	11	5
Washington	33,623	16,393	382	16,848	435	-	-	24
Wayne	849	19	-	830	59	-	101	420
Westmoreland	45,542	7,732	187	37,623	1,065	-	-	626
Wyoming	452	45	-	407	16	-	-	-
York	35,549	448	57	35,044	3,508	3,647	2,045	4,443

(continued on following page)

TABLE 3: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1940  
(continued)

County	Lumber and wood products	Furniture and fixtures	Paper and allied products	Printing and publishing	Chemicals and allied products	Petroleum and related products	Rubber and plastics products	Leather and leather products
Total	13,915	16,630	29,694	46,647	24,129	12,685	5,576	30,917
Adams	163	683	-	176	17	-	97	1,025
Allegheny	1,796	1,259	1,418	6,017	2,723	767	16	324
Armstrong	10	-	-	47	-	-	-	36
Beaver	573	1	98	168	103	207	1	-
Bedford	109	9	-	26	9	-	-	-
Berks	346	279	711	629	599	-	-	1,298
Blair	41	36	1,398	266	122	-	-	301
Bradford	164	-	129	119	1	-	-	40
Bucks	192	-	1,063	169	1,454	-	415	227
Butler	73	-	-	109	163	704	247	-
Cambria	88	120	9	261	15	-	-	7
Cameron	-	-	-	4	53	-	-	99
Carbon	16	-	-	56	62	-	-	133
Centre	99	-	-	75	144	-	-	-
Chester	26	257	1,736	210	303	-	-	-
Clarion	15	45	97	27	-	-	70	-
Clearfield	9	5	103	121	18	-	-	420
Clinton	163	-	1,108	76	207	-	-	144
Columbia	41	-	-	68	11	-	-	63
Crawford	28	42	-	126	148	211	-	-
Cumberland	123	113	192	133	6	-	98	895
Dauphin	117	201	70	1,406	97	99	-	1,697
Delaware	242	52	1,942	238	571	2,890	42	156
Elk	262	-	1,183	42	43	-	-	654
Erie	390	913	1,578	922	144	94	-	1,181
Fayette	108	-	77	237	270	-	-	-
Forest	12	-	-	4	73	6	-	139
Franklin	82	237	43	114	1	-	-	188
Fulton	-	-	-	6	-	-	-	-
Greene	4	-	-	26	-	21	-	-
Huntingdon	38	-	363	119	-	-	-	-
Indiana	84	18	-	74	-	-	107	-
Jefferson	13	33	-	77	-	-	-	-
Juniata	21	-	-	7	-	-	-	-
Lackawanna	61	111	29	1,243	205	12	3	2
Lancaster	1,271	176	521	823	175	-	-	3,402
Lawrence	58	5	-	126	244	-	-	-
Lebanon	36	4	382	240	34	-	67	1,500
Lehigh	378	683	120	584	249	-	152	679
Luzerne	124	254	123	920	230	-	-	387
Lycoming	355	2,027	761	513	129	-	51	1,284
McKean	716	16	163	214	308	1,041	-	369
Mercer	31	1	-	184	47	-	-	20
Mifflin	106	1	-	60	2	-	-	-
Monroe	19	5	-	434	51	-	-	104
Montgomery	401	236	1,742	443	351	82	1,215	657
Montour	-	-	-	18	1	-	-	-
Northampton	97	52	220	1,363	618	-	-	387
Northumberland	76	1,339	99	207	25	-	10	-
Perry	34	-	-	14	-	-	-	1
Philadelphia	2,595	3,943	9,006	24,547	12,238	4,936	1,868	8,395
Pike	40	-	-	2	-	-	-	-
Potter	29	-	303	20	151	-	-	211
Schuylkill	75	11	176	301	940	-	-	906
Snyder	7	-	59	28	6	-	-	55
Somerset	131	-	-	81	50	-	-	-
Sullivan	6	-	-	4	-	-	-	-
Susquehanna	172	-	-	31	-	-	-	-
Tioga	73	-	-	30	53	-	-	1,343
Union	11	229	-	27	-	-	-	-
Venango	80	-	-	437	6	1,054	-	-
Warren	331	533	-	100	18	558	-	-
Washington	59	-	92	207	170	3	2	-
Wayne	60	-	5	28	-	-	-	43
Westmoreland	151	-	-	410	295	-	1,108	-
Wyoming	40	90	-	11	-	-	-	245
York	844	2,611	2,575	842	176	-	7	1,900

(continued on following page)

TABLE 3: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1940  
(continued)

County	Stone, clay, and glass products	Primary metal products	Fabricated metal products	Machinery, except electrical	Electrical machinery, equipment, and supplies	Transportation equipment	Instruments and related products	Miscellaneous manufactures
Total	56,851	114,898	192,763	69,915	53,661	61,619	14,868	25,247
Adams	183	112	56	3	-	-	-	-
Allegheny	6,185	39,318	58,295	7,677	18,107	14,227	1,874	1,873
Armstrong	3,444	-	982	10	-	-	-	-
Beaver	1,852	7,033	18,978	251	1,990	91	228	59
Bedford	12	-	-	-	-	-	-	-
Berks	567	4,129	3,973	3,584	600	971	860	1,093
Blair	950	4	423	8	5	29	17	78
Bradford	-	72	-	743	-	33	57	-
Bucks	386	184	457	112	38	1,114	1,116	109
Butler	767	16	3,243	316	4	1,248	-	2
Cambria	748	12,302	464	162	26	1,826	5	53
Cameron	-	-	-	-	2,085	-	-	-
Carbon	42	3,362	27	-	-	-	-	4
Centre	1,162	9	661	70	-	-	-	-
Chester	565	3,117	2,756	1,062	-	110	2	12
Clarion	771	-	-	12	-	-	-	-
Clearfield	2,060	-	112	478	19	-	-	-
Clinton	372	-	112	6	131	1,179	-	-
Columbia	42	13	121	62	-	3,333	-	30
Crawford	10	919	223	579	-	-	219	4,159
Cumberland	33	412	161	51	15	24	1	120
Dauphin	208	5,810	1,767	644	16	42	104	111
Delaware	499	2,308	1,442	4,238	20	13,057	-	1,439
Elk	315	34	1	31	1,885	32	-	-
Erie	593	3,817	4,402	2,022	6,867	1,049	1,052	2,388
Fayette	1,279	1,001	890	108	-	-	-	23
Forest	223	-	-	-	-	-	-	-
Franklin	7	26	152	3,888	-	16	-	28
Fulton	-	-	-	-	-	-	-	-
Greene	24	-	-	10	-	-	-	-
Huntingdon	1,170	-	123	7	-	-	-	39
Indiana	285	41	64	81	-	-	-	-
Jefferson	854	-	4	30	-	20	-	53
Juniata	161	-	-	-	-	-	-	-
Lackawanna	68	27	858	256	110	-	42	674
Lancaster	1,600	969	2,951	1,072	194	151	1,857	3,678
Lawrence	2,657	602	6,522	572	-	132	-	-
Lebanon	452	1,727	3,095	28	-	35	7	3
Lehigh	1,552	303	3,447	522	383	3,593	58	26
Luzerne	156	8	2,035	967	8	175	48	9
Lycoming	85	324	1,725	419	-	1,413	15	12
McKean	538	7	405	599	-	-	-	33
Mercer	23	4,059	3,678	1,565	3,427	435	-	24
Mifflin	206	237	93	23	-	1,388	-	1
Monroe	25	62	282	70	183	-	-	-
Montgomery	3,172	3,265	8,735	1,834	150	2,494	160	1,068
Montour	3	270	47	204	-	-	-	-
Northampton	3,716	720	4,969	13,375	386	104	5	628
Northumberland	126	112	609	119	-	335	7	33
Perry	3	-	141	4	-	19	-	-
Philadelphia	3,767	2,970	24,482	14,413	14,997	11,665	5,530	6,716
Pike	-	-	-	-	-	-	-	-
Potter	-	-	-	-	-	-	50	212
Schuylkill	128	6	89	205	-	6	10	49
Snyder	72	-	-	8	-	-	-	-
Somerset	48	-	-	20	-	-	-	-
Sullivan	-	-	-	-	-	-	-	-
Susquehanna	-	-	-	28	-	-	-	33
Tioga	625	-	453	16	-	-	-	-
Union	16	24	3	-	-	99	-	-
Venango	206	29	885	1,897	2	276	8	-
Warren	268	975	740	16	84	150	-	-
Washington	5,048	2,150	8,469	178	-	-	9	2
Wayne	-	-	101	13	-	-	-	-
Westmoreland	5,662	11,457	13,623	736	1,261	403	787	39
Wyoming	3	-	2	-	-	-	-	-
York	857	556	4,435	4,511	668	345	740	334



TABLE 4: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1951

County	Total employed	Mines and quarries	Railroad repair shops	Total manufacturing	Food and kindred products	Tobacco manufactures	Textile mill products	Apparel and related products
Total	1,786,031	155,284	51,015	1,579,732	121,242	15,839	120,148	192,730
Adams	7,046	224	1	6,821	2,344	132	237	585
Allegheny	252,922	9,404	9,206	234,312	20,562	43	1,267	1,489
Armstrong	10,780	2,916	14	7,850	1,325	-	-	-
Beaver	50,685	433	1,056	49,196	541	-	-	332
Bedford	1,744	466	33	1,245	91	-	-	583
Berks	59,324	229	1,847	57,248	4,071	334	4,111	18,114
Blair	24,149	304	14,086	9,759	1,613	-	890	1,018
Bradford	4,829	5	846	3,978	93	-	232	1,081
Bucks	24,403	371	1	24,031	1,006	71	1,441	5,776
Butler	11,907	1,506	103	10,298	322	-	-	294
Cambria	40,065	13,693	533	25,839	1,162	38	135	2,218
Cameron	2,913	6	37	2,870	3	-	-	2
Carbon	12,838	4,370	421	8,047	144	-	581	2,641
Centre	5,599	888	17	4,694	397	277	-	887
Chester	20,813	107	161	20,545	2,229	-	702	2,297
Clarion	3,441	1,266	44	2,131	89	1	-	-
Clearfield	11,519	4,359	942	6,218	397	-	47	886
Clinton	8,390	264	1,346	6,780	168	-	296	428
Columbia	12,120	1,328	10	10,782	1,188	-	3,271	2,003
Crawford	9,178	2	318	8,858	589	-	1,984	4
Cumberland	12,209	76	2,742	9,391	1,222	11	1,709	1,766
Dauphin	29,609	407	1,948	27,254	6,154	268	7	3,747
Delaware	55,413	192	326	54,895	1,100	-	6,464	944
Elk	9,089	492	9	8,588	100	-	-	-
Erie	49,791	55	722	49,014	2,365	2	-	257
Fayette	19,407	9,337	668	9,402	757	19	79	1,024
Forest	600	-	-	600	2	-	-	-
Franklin	10,186	136	158	9,892	2,024	-	-	2,569
Fulton	149	31	-	118	60	-	-	-
Greene	9,057	8,634	-	423	98	-	-	107
Huntingdon	5,456	822	54	4,580	346	-	1,147	561
Indiana	8,859	6,054	75	2,730	218	-	-	160
Jefferson	6,637	1,505	424	4,708	379	-	179	135
Juniata	1,010	25	-	985	302	-	-	395
Lackawanna	42,658	9,708	2,214	30,736	1,963	1,001	5,101	12,420
Lancaster	42,895	377	54	42,464	4,215	868	2,066	6,923
Lawrence	18,160	582	803	16,775	261	-	100	88
Lebanon	15,885	839	56	14,990	1,429	37	1,006	4,669
Lehigh	39,188	215	162	38,811	2,258	1,006	6,908	8,878
Luzerne	70,571	28,579	844	41,148	4,150	2,743	6,723	16,937
Lycoming	19,806	143	268	19,395	674	-	1,890	2,723
McKean	6,804	55	3	6,746	178	-	-	188
Mercer	24,830	354	796	23,680	467	-	-	110
Mifflin	8,535	247	43	8,245	591	-	3,348	666
Monroe	4,882	17	-	4,865	50	-	613	695
Montgomery	64,677	1,021	138	63,518	2,995	-	4,633	9,859
Montour	1,829	76	-	1,753	12	-	134	158
Northampton	55,465	1,164	435	53,866	1,319	-	3,690	11,487
Northumberland	19,680	4,267	241	15,172	1,602	275	2,713	5,376
Perry	1,140	16	-	1,124	195	-	-	481
Philadelphia	348,882	216	4,146	344,520	35,346	5,793	51,190	36,196
Pike	209	-	-	209	10	-	30	8
Potter	1,175	-	27	1,148	54	-	-	86
Schuylkill	33,156	13,015	945	19,196	1,146	-	717	12,038
Snyder	1,812	27	-	1,785	89	-	688	440
Somerset	8,189	5,497	109	2,583	496	5	-	1,017
Sullivan	837	78	-	759	96	-	36	274
Susquehanna	2,503	50	337	2,116	121	-	61	525
Tioga	3,482	117	-	3,365	134	-	-	127
Union	1,864	37	2	1,825	369	-	321	271
Venango	9,573	151	208	9,214	137	-	-	-
Warren	5,820	17	33	5,770	179	-	-	4
Washington	35,810	13,103	587	22,120	668	-	-	5
Wayne	2,742	32	-	2,710	46	-	451	746
Westmoreland	52,384	4,844	354	47,186	1,188	1	210	728
Wyoming	902	37	-	865	37	-	-	393
York	47,549	496	62	46,991	5,306	2,914	2,740	5,911

(continued on following page)

TABLE 4: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1951  
(continued)

County	Lumber and wood products	Furniture and fixtures	Paper and allied products	Printing and publishing	Chemicals and allied products	Petroleum and related products	Rubber and plastic products	Leather and leather products
Total	21,598	25,017	37,618	58,927	44,134	16,825	12,789	33,224
Adams	135	806	30	205	-	-	101	1,793
Allegheny	1,617	1,936	2,348	7,193	4,461	681	46	361
Armstrong	133	-	-	65	222	-	-	33
Beaver	701	1	108	239	1,663	328	2	-
Bedford	481	1	-	40	16	-	-	-
Berks	454	179	1,635	839	689	-	-	1,374
Blair	35	81	1,618	593	100	-	-	625
Bradford	283	1	194	122	-	-	-	33
Bucks	222	2,352	1,527	201	3,454	1	592	87
Butler	266	-	-	174	428	665	335	1
Cambria	310	265	9	524	34	-	-	21
Cameron	7	-	-	6	42	-	-	-
Carbon	31	41	-	65	12	-	-	28
Centre	175	-	1	116	1	-	-	-
Chester	115	337	1,913	262	1,298	-	648	-
Clarion	297	-	68	39	-	-	188	-
Clearfield	342	7	142	218	14	-	176	287
Clinton	95	124	1,275	87	358	-	-	106
Columbia	218	3	-	106	24	-	-	-
Crawford	213	61	-	178	71	1	118	-
Cumberland	153	145	424	172	10	-	442	863
Dauphin	104	292	57	1,331	105	21	34	1,930
Delaware	506	118	2,723	1,526	1,561	4,829	68	38
Elk	283	-	1,281	56	82	-	-	399
Erie	616	1,168	2,339	1,084	465	74	1,656	107
Fayette	343	3	-	276	504	-	3	-
Forest	174	-	-	7	-	1	-	119
Franklin	127	99	60	173	1	-	-	478
Fulton	46	-	-	5	-	-	-	-
Greene	86	-	-	43	-	11	-	-
Huntingdon	157	-	336	186	-	-	-	-
Indiana	196	-	-	118	-	-	272	247
Jefferson	218	-	-	85	35	-	-	-
Juniata	104	-	-	8	-	-	-	-
Lackawanna	294	205	338	1,794	886	-	3	716
Lancaster	616	161	636	1,391	340	-	-	2,798
Lawrence	132	196	-	167	335	-	2	202
Lebanon	59	9	418	290	255	83	15	1,004
Lehigh	463	798	332	820	701	-	320	690
Luzerne	318	492	97	1,185	329	-	1	1,907
Lycoming	1,061	1,660	731	533	132	-	42	1,119
McKean	557	254	268	129	312	825	-	174
Mercer	364	2	44	257	58	-	-	34
Mifflin	170	-	-	64	-	-	-	-
Monroe	119	4	109	536	115	-	-	143
Montgomery	389	702	1,558	869	2,322	297	5,063	605
Montour	-	138	-	31	625	-	-	-
Northampton	142	317	498	2,524	810	-	-	456
Northumberland	320	972	120	255	35	49	-	135
Perry	155	-	-	27	-	-	-	-
Philadelphia	2,758	6,260	10,786	27,850	17,973	7,204	2,441	8,264
Pike	63	-	76	3	-	-	-	-
Potter	134	3	-	20	51	-	-	196
Schuylkill	76	13	240	378	1,158	99	-	751
Snyder	208	17	80	16	-	-	-	87
Somerset	616	-	-	105	15	-	-	48
Sullivan	198	-	-	6	-	-	-	117
Susquehanna	304	123	-	76	-	-	-	392
Tioga	201	-	-	35	30	-	-	1,275
Union	270	424	-	29	-	-	-	-
Venango	473	4	-	563	284	1,228	-	41
Warren	435	580	-	122	104	428	-	-
Washington	150	1	133	344	270	-	10	-
Wayne	317	121	4	28	-	-	-	709
Westmoreland	242	10	-	632	1,159	-	211	-
Wyoming	89	-	-	16	-	-	-	315
York	662	3,531	3,062	1,489	185	-	-	2,116

(continued on following page)

TABLE 4: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1951  
(continued)

County	Stone, clay, and glass products	Primary metal products	Fabricated metal products	Machinery, except electrical	Electrical machinery, equipment, and supplies	Transportation equipment	Instruments and related products	Miscellaneous manufactures
Total	74,639	<del>150,788</del> 157,919	<del>279,600</del> 272,469	101,751	137,518	78,017	25,048	32,280
Adams	211	-	232	6	-	-	-	3
Allegheny	9,283	56,696	66,151	10,058	26,065	18,869	2,351	2,835
Armstrong	5,218	-	649	202	-	1	-	2
Beaver	2,170	11,692	25,735	821	4,676	138	-	49
Bedford	6	-	-	27	-	-	-	-
Berks	841	4,391	6,066	7,688	1,026	3,181	1,085	1,170
Blair	1,207	2	613	108	1,094	43	32	87
Bradford	-	103	19	1,517	-	-	124	176
Bucks	912	134	1,433	675	1,361	272	2,164	350
Butler	1,218	45	4,362	412	90	1,636	-	50
Cambria	777	16,349	717	185	140	2,890	38	27
Cameron	-	56	2	6	2,746	-	-	-
Carbon	41	3,174	85	30	1,172	-	-	2
Centre	1,382	6	1,323	71	52	-	-	6
Chester	637	<del>859</del> 7,990	<del>7,990</del> 859	1,097	79	65	3	14
Clarion	1,364	-	5	29	51	-	-	-
Clearfield	2,407	-	178	433	286	-	396	2
Clinton	325	-	546	2	2,194	733	-	43
Columbia	60	136	112	192	-	3,278	-	191
Crawford	35	1,694	1,247	431	-	-	57	2,175
Cumberland	259	495	511	282	578	28	1	320
Dauphin	280	7,274	2,777	892	1,247	481	161	92
Delaware	287	3,895	2,587	8,749	1,235	16,419	11	1,835
Elk	259	47	101	31	5,926	23	-	-
Erie	580	4,716	6,959	3,112	18,200	1,070	1,532	2,712
Fayette	2,235	1,735	1,755	147	1	225	15	281
Forest	285	12	-	-	-	-	-	-
Franklin	65	-	291	3,969	-	8	-	28
Fulton	7	-	-	-	-	-	-	-
Greene	30	28	-	20	-	-	-	-
Huntingdon	1,694	-	3	51	-	-	-	99
Indiana	172	127	549	671	-	-	-	-
Jefferson	1,587	-	129	83	1,796	34	-	48
Juniata	175	-	1	-	-	-	-	-
Lackawanna	170	44	2,410	869	1,493	1	78	950
Lancaster	1,742	1,845	4,359	2,795	3,279	221	3,141	5,068
Lawrence	3,939	3,070	6,522	1,700	7	1	-	53
Lebanon	488	1,394	3,659	71	-	75	14	15
Lehigh	1,755	370	3,396	1,466	4,950	3,255	105	340
Luzerne	202	69	3,087	1,588	231	258	76	755
Lycoming	124	339	3,124	3,478	1,638	71	32	24
McKean	1,029	8	1,085	1,539	84	-	-	116
Mercer	151	2,772	8,246	2,676	7,370	1,089	2	38
Mifflin	307	-	122	329	-	2,625	6	17
Monroe	44	106	1,657	378	258	-	2	36
Montgomery	4,109	4,707	12,165	4,349	3,215	3,997	368	1,316
Montour	17	35	1	602	-	-	-	-
Northampton	3,937	1,240	24,044	1,244	1,049	94	27	988
Northumberland	297	231	242	59	1,504	898	10	79
Perry	5	-	193	2	-	66	-	-
Philadelphia	4,320	5,895	33,574	20,753	34,762	14,331	10,057	8,767
Pike	-	-	7	12	-	-	-	-
Potter	2	-	-	-	423	-	55	124
Schuylkill	145	9	2,106	118	-	12	19	171
Snyder	111	-	3	9	-	37	-	-
Somerset	144	31	82	24	-	-	-	-
Sullivan	-	-	31	1	-	-	-	-
Susquehanna	-	133	-	94	42	225	-	20
Tioga	864	-	600	25	-	65	-	9
Union	2	-	137	2	-	-	-	-
Venango	656	35	1,636	4,059	2	70	17	9
Warren	407	935	1,275	68	905	309	-	19
Washington	6,397	2,386	8,836	489	2,299	-	11	121
Wayne	32	-	179	34	36	-	-	7
Westmoreland	6,403	10,854	16,865	3,125	2,929	474	2,037	118
Wyoming	-	-	13	-	2	-	-	-
York	831	614	6,816	7,796	1,025	449	1,021	523



TABLE 5: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1956

County	Total employed	Mines and quarries	Railroad repair shops	Total manufacturing	Food and kindred products	Tobacco manufactures	Textile mill products	Apparel and related products
Total	1,590,501	78,933	30,884	1,480,684	116,131	14,413	97,658	162,632
Adams	6,626	277	1	6,348	1,663	102	80	590
Allegheny	215,351	3,691	5,246	206,414	19,605	18	90	1,320
Armstrong	8,448	1,241	8	7,199	1,336	-	-	-
Beaver	52,966	323	694	51,949	661	-	-	14
Bedford	1,497	221	-	1,276	88	-	2	572
Berks	53,803	173	1,296	52,334	4,177	118	12,914	4,452
Blair	19,514	289	8,798	10,427	1,819	-	1,119	597
Bradford	5,264	8	523	4,733	113	-	797	6
Bucks	30,948	428	-	30,520	819	55	2,061	3,377
Butler	12,320	1,131	64	11,125	314	-	30	216
Cambria	32,864	7,944	358	24,562	1,214	28	-	2,729
Cameron	2,182	39	17	2,126	2	-	-	-
Carbon	10,388	1,890	260	8,238	123	-	774	2,372
Centre	5,441	624	14	4,803	329	405	195	626
Chester	22,681	126	235	22,320	2,564	-	1,503	835
Clarion	3,125	989	40	2,096	129	-	-	-
Clearfield	9,745	3,009	739	5,997	470	-	66	788
Clinton	6,601	142	474	5,985	114	-	662	7
Columbia	10,314	627	3	9,684	1,444	-	2,828	1,998
Crawford	9,705	30	215	9,460	546	-	18	-
Cumberland	11,506	95	1,700	9,711	1,205	8	1,280	1,565
Dauphin	27,852	231	1,133	26,488	5,479	270	89	3,310
Delaware	48,881	237	63	48,581	1,323	-	3,749	1,708
Elk	8,056	233	-	7,823	97	-	-	-
Erie	43,601	16	361	43,224	2,378	1	-	327
Fayette	11,505	3,379	308	7,818	759	12	208	891
Forest	588	24	-	564	14	-	-	-
Franklin	9,645	70	140	9,435	1,400	-	398	2,330
Fulton	229	131	-	98	45	-	-	-
Greene	7,170	6,622	-	548	127	-	-	272
Huntingdon	3,740	401	61	3,278	203	-	-	772
Indiana	7,076	3,617	29	3,430	236	-	-	475
Jefferson	6,154	917	292	4,945	236	-	-	213
Juniata	803	3	-	800	46	-	-	362
Lackawanna	34,981	3,786	1,126	30,069	1,733	1,323	3,961	11,100
Lancaster	44,118	324	9	43,785	3,353	688	7,202	4,712
Lawrence	15,531	634	422	14,475	284	-	187	93
Lebanon	14,536	1,144	53	13,339	1,265	-	1,487	3,630
Lehigh	36,965	90	82	36,793	2,664	572	5,088	7,429
Luzerne	51,823	10,517	394	40,912	3,140	3,771	4,111	16,728
Lycoming	19,440	130	225	19,085	739	-	1,759	2,628
McKean	7,594	36	-	7,558	164	-	-	-
Mercer	25,785	229	499	25,057	434	-	-	31
Mifflin	7,239	200	63	6,976	534	-	26	803
Monroe	4,177	23	-	4,154	24	-	360	574
Montgomery	65,012	668	107	64,237	2,874	-	5,470	5,258
Montour	2,153	20	-	2,133	4	-	80	157
Northampton	49,950	819	363	48,768	1,372	-	2,858	9,628
Northumberland	15,161	1,825	186	13,150	1,948	385	1,367	4,870
Perry	619	9	-	610	166	-	-	255
Philadelphia	306,331	29	2,748	303,554	35,167	4,321	27,947	41,879
Pike	85	-	-	85	-	-	16	16
Potter	1,005	33	-	972	29	-	53	-
Schuylkill	26,487	5,700	531	20,256	1,216	211	2,113	10,636
Snyder	1,947	33	-	1,914	195	-	466	582
Somerset	5,769	3,009	48	2,712	546	3	-	1,219
Sullivan	736	-	-	736	108	-	-	283
Susquehanna	2,504	1	318	2,185	148	-	39	311
Tioga	3,205	55	-	3,150	153	-	-	72
Union	1,625	55	2	1,568	267	-	391	167
Venango	8,448	192	85	8,171	139	-	-	-
Warren	5,504	15	21	5,468	264	-	-	-
Washington	30,191	7,508	394	22,289	668	-	-	66
Wayne	2,428	40	-	2,388	35	-	140	888
Westmoreland	45,606	2,328	89	43,189	887	1	193	511
Wyoming	980	46	-	934	97	-	33	352
York	45,977	257	47	45,673	4,436	2,121	3,448	5,030

(continued on following page)

TABLE 5: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1956  
(continued)

County	Lumber and wood products	Furniture and fixtures	Paper and allied products	Printing and publishing	Chemicals and allied products	Petroleum and related products	Rubber and plastics products	Leather and leather products
Total	14,873	21,142	40,565	58,386	45,162	17,364	21,641	31,936
Adams	138	497	224	85	17	-	624	1,510
Allegheny	708	1,335	2,821	7,375	4,213	451	198	68
Armstrong	76	-	-	54	233	7	-	19
Beaver	88	70	179	262	1,440	210	5	-
Bedford	419	1	-	42	13	-	-	-
Berks	235	365	1,673	842	1,145	-	207	1,813
Blair	51	75	1,722	749	88	6	-	971
Bradford	269	6	219	368	-	-	-	27
Bucks	245	204	2,423	325	2,993	-	582	71
Butler	197	29	-	153	1,276	293	460	-
Cambria	284	188	7	390	26	13	-	-
Cameron	9	-	-	4	46	-	-	-
Carbon	22	59	-	66	30	-	-	260
Centre	169	6	18	144	-	2	-	-
Chester	324	32	1,892	556	840	-	863	-
Clarion	178	44	66	48	2	-	150	-
Clearfield	254	4	161	172	10	-	138	265
Clinton	47	169	1,390	92	352	5	-	-
Columbia	168	25	13	116	10	-	-	-
Crawford	220	50	-	185	1,306	35	269	2
Cumberland	68	175	332	180	19	10	456	955
Dauphin	142	109	13	1,410	77	20	7	1,958
Delaware	460	407	3,288	2,085	1,245	5,965	232	109
Elk	277	-	1,076	52	144	-	3	209
Erie	361	1,552	2,466	752	152	348	2,154	88
Fayette	418	80	-	268	370	7	-	-
Forest	98	-	-	6	-	-	21	60
Franklin	137	87	59	154	-	-	121	498
Fulton	48	-	-	4	-	-	-	-
Greene	78	-	-	41	-	-	-	-
Huntingdon	119	-	329	176	-	-	-	-
Indiana	103	-	-	97	461	6	310	407
Jefferson	137	-	-	144	45	7	-	-
Juniata	223	-	-	5	-	-	-	-
Lackawanna	121	282	389	2,653	234	-	674	888
Lancaster	491	452	547	1,618	541	32	76	2,996
Lawrence	78	36	7	195	290	10	62	311
Lebanon	60	-	405	364	375	-	84	888
Lehigh	242	344	151	853	858	29	28	715
Luzerne	200	510	236	1,220	350	-	584	3,094
Lycoming	761	1,519	681	526	122	6	64	968
McKean	399	558	283	157	244	716	-	88
Mercer	136	88	33	288	60	26	-	-
Mifflin	190	-	-	63	2,431	-	-	-
Monroe	18	57	98	606	87	-	66	101
Montgomery	561	896	2,106	1,061	1,853	46	8,024	412
Montour	5	153	-	26	-	7	-	-
Northampton	119	389	1,646	1,338	699	4	75	254
Northumberland	329	816	129	334	755	-	-	432
Perry	113	-	-	28	-	-	-	-
Philadelphia	1,421	4,387	10,139	25,552	17,514	7,012	3,130	5,839
Pike	25	-	-	3	8	-	-	-
Potter	112	3	-	22	24	-	-	197
Schuylkill	46	150	298	329	1,107	255	-	689
Snyder	302	35	76	18	-	-	-	70
Somerset	402	-	-	94	14	-	14	79
Sullivan	170	-	-	5	-	-	-	170
Susquehanna	162	113	-	54	-	-	-	368
Tioga	116	-	-	35	24	10	-	1,312
Union	11	518	65	18	-	-	-	-
Venango	171	-	-	426	113	1,105	153	-
Warren	274	527	-	179	31	330	50	-
Washington	151	39	231	318	307	8	14	-
Wayne	169	175	2	29	6	-	-	432
Westmoreland	146	5	163	690	266	60	1,354	-
Wyoming	77	-	-	12	10	-	-	343
York	525	3,521	2,509	1,870	286	323	389	2,000

(continued on following page)

TABLE 5: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1956  
(continued)

County	Stone, clay, and glass products	Primary metal products	Fabricated metal products	Machinery, except electrical	Electrical machinery, equipment, and supplies	Transportation equipment	Instruments and related products	Miscellaneous manufactures
Total	68,501	278,409	121,556	117,362	130,179	72,730	20,579	29,465
Adams	329	203	57	67	162	-	-	-
Allegheny	8,523	85,328	18,780	12,466	26,076	11,744	2,129	3,166
Armstrong	5,051	3	190	228	-	-	-	2
Beaver	2,555	33,504	7,692	895	3,806	50	-	518
Bedford	2	-	-	137	-	-	-	-
Berks	827	6,217	4,177	6,525	1,515	3,290	968	874
Blair	909	1	672	371	907	29	-	341
Bradford	-	155	-	1,603	966	-	-	204
Bucks	910	7,908	1,390	1,095	916	2,188	2,609	349
Butler	1,249	4,091	394	683	289	1,234	211	6
Cambria	503	15,875	2,474	263	104	448	-	16
Cameron	-	31	1	21	2,012	-	-	-
Carbon	50	3,006	18	26	1,391	20	-	21
Centre	1,314	1,388	-	160	47	-	-	-
Chester	854	7,119	1,452	1,358	986	752	6	384
Clarion	1,344	-	26	10	-	99	-	-
Clearfield	1,758	117	378	130	1,118	-	-	168
Clinton	98	200	193	11	982	1,653	-	10
Columbia	58	67	599	50	-	2,307	-	1
Crawford	23	2,567	274	901	185	2	51	2,826
Cumberland	184	443	1,171	689	813	-	-	158
Dauphin	289	6,933	2,094	812	1,539	1,860	10	67
Delaware	297	3,561	1,629	6,833	1,242	13,537	200	711
Elk	267	48	3	545	5,102	-	-	-
Erie	178	5,211	4,491	6,555	6,365	6,183	1,507	2,155
Fayette	2,181	538	1,471	90	25	194	288	18
Forest	352	10	3	-	-	-	-	-
Franklin	88	62	81	3,882	-	96	42	-
Fulton	1	-	-	-	-	-	-	-
Greene	20	-	1	9	-	-	-	-
Huntingdon	1,595	-	56	8	-	-	-	20
Indiana	291	97	5	583	-	-	248	111
Jefferson	2,299	15	180	101	1,500	24	-	44
Juniata	163	-	1	-	-	-	-	-
Lackawanna	149	382	1,025	745	2,186	79	1	2,144
Lancaster	1,878	1,430	4,524	4,361	5,424	465	1,710	1,285
Lawrence	3,380	3,389	1,706	3,819	8	604	6	10
Lebanon	652	1,327	2,646	118	-	-	-	38
Lehigh	1,719	832	2,973	2,518	5,340	4,094	83	261
Luzerne	235	393	1,330	2,748	844	431	113	874
Lycoming	89	1,364	1,460	879	2,231	2,989	10	290
McKean	1,085	8	1,834	536	1,118	-	2	366
Mercer	89	10,609	1,100	2,670	8,212	997	34	250
Mifflin	162	2,325	70	367	-	-	-	5
Monroe	38	106	232	609	274	-	14	890
Montgomery	4,454	8,846	9,367	5,133	4,415	2,070	500	891
Montour	-	1	-	794	-	906	-	-
Northampton	3,718	22,252	1,128	912	1,163	-	-	1,213
Northumberland	295	248	84	131	-	918	-	109
Perry	-	-	-	5	15	-	-	28
Philadelphia	3,429	6,006	28,271	24,767	30,731	12,460	7,356	6,226
Pike	-	-	-	-	-	17	-	-
Potter	2	-	12	-	478	-	40	-
Schuylkill	191	1,660	852	159	3	172	9	160
Snyder	110	-	-	-	-	60	-	-
Somerset	92	57	76	36	1	-	79	-
Sullivan	-	-	-	-	-	-	-	-
Susquehanna	20	176	-	155	639	-	-	-
Tioga	1	36	582	-	718	85	-	6
Union	-	-	114	17	-	-	-	-
Venango	370	674	293	4,655	-	40	31	1
Warren	67	946	1,152	164	1,424	60	-	-
Washington	5,694	10,162	1,037	566	2,991	-	17	20
Wayne	19	-	5	402	86	-	-	-
Westmoreland	4,964	19,819	5,976	4,685	1,867	16	1,497	89
Wyoming	-	-	1	9	-	-	-	-
York	1,037	663	3,753	8,295	1,963	557	808	2,139



TABLE 6: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1957

County	Total employed	Mines and quarries	Railroad repair shops	Total manufacturing	Food and kindred products	Tobacco manufactures	Textile mill products	Apparel and related products
Total	1,577,714	76,098	28,035	1,473,581	121,224	13,293	92,177	161,390
Adams	6,755	284	1	6,470	1,725	107	92	552
Allegheny	209,821	3,765	4,615	201,441	19,297	22	65	1,086
Armstrong	8,351	1,348	8	6,995	1,181	-	-	-
Beaver	53,887	239	986	52,662	1,097	-	-	13
Bedford	1,531	252	-	1,279	106	-	4	609
Berks	51,941	446	1,285	50,210	4,716	119	11,888	3,986
Blair	17,993	196	7,564	10,233	1,821	-	1,128	557
Bradford	5,288	9	518	4,761	268	-	747	88
Bucks	30,319	373	-	29,946	1,104	47	1,857	3,332
Butler	13,087	1,025	62	12,000	320	-	47	230
Cambria	34,018	8,037	278	25,703	1,313	13	-	2,437
Cameron	2,067	19	15	2,033	9	-	-	-
Carbon	9,925	1,640	288	7,997	167	-	541	2,393
Centre	5,168	464	13	4,691	265	442	172	672
Chester	24,099	215	250	23,634	2,506	-	1,075	916
Clarion	3,125	921	29	2,175	142	-	-	-
Clearfield	10,484	3,049	828	6,607	562	-	192	788
Clinton	7,952	1,822	398	5,732	134	-	350	317
Columbia	10,642	885	3	9,754	1,396	-	2,906	2,014
Crawford	9,496	22	204	9,270	709	-	21	-
Cumberland	10,695	90	1,411	9,194	1,160	8	1,328	998
Dauphin	28,824	221	1,037	27,566	5,774	164	86	3,385
Delaware	50,819	213	63	50,543	1,402	-	3,427	1,745
Elk	7,892	177	-	7,715	140	-	-	-
Erne	43,083	15	347	42,721	2,529	1	-	299
Fayette	10,505	2,857	304	7,344	805	13	213	829
Forest	583	17	-	566	12	-	-	-
Franklin	10,104	66	111	9,927	1,227	-	584	2,782
Fulton	136	32	-	104	46	-	-	-
Greene	7,291	6,705	-	586	133	-	-	312
Huntingdon	3,816	306	57	3,453	216	-	-	725
Indiana	7,983	3,500	25	4,458	216	-	-	887
Jefferson	5,961	850	304	4,807	225	-	-	197
Juniata	1,000	6	-	994	56	-	-	544
Lockawanna	34,665	4,314	737	29,614	1,976	1,286	3,593	10,422
Lancaster	43,638	259	11	43,368	3,707	647	6,529	4,735
Lawrence	15,995	577	392	15,026	326	-	203	90
Lebanon	14,658	1,159	49	13,450	1,042	-	1,428	3,648
Lehigh	36,922	17	85	36,820	3,114	504	4,595	7,344
Luzerne	50,333	9,298	358	40,677	3,345	3,633	4,018	16,046
Lycoming	19,216	104	203	18,909	864	-	1,993	2,228
McKean	7,648	17	-	7,631	246	-	-	-
Mercer	25,834	180	571	25,083	471	-	-	46
Mifflin	7,258	200	58	7,000	470	-	-	805
Monroe	4,003	20	-	3,983	67	-	331	682
Montgomery	64,569	345	97	64,127	3,306	-	4,686	5,079
Montour	2,500	26	-	2,474	3	-	164	170
Northampton	50,818	184	342	50,292	1,169	-	2,828	9,812
Northumberland	15,221	1,688	186	13,347	2,017	302	1,333	4,554
Perry	688	8	-	680	183	-	-	355
Philadelphia	302,427	25	2,641	299,761	36,389	3,780	26,973	42,690
Pike	71	-	-	71	12	-	18	16
Potter	1,047	13	-	1,034	42	-	58	-
Schuylkill	25,381	5,225	397	19,759	1,397	206	2,306	10,054
Snyder	1,950	30	-	1,920	155	-	408	594
Somerset	5,665	2,596	55	3,014	548	4	-	1,451
Sullivan	593	-	-	593	91	-	-	170
Susquehanna	2,405	-	236	2,169	158	-	20	346
Tioga	3,273	69	-	3,204	170	-	-	50
Union	1,612	54	1	1,557	208	-	323	144
Venango	8,168	180	85	7,903	176	-	-	-
Warren	5,637	15	20	5,602	247	-	-	-
Washington	28,466	6,596	381	21,489	694	-	-	74
Wayne	2,279	30	-	2,249	56	-	170	898
Westmoreland	45,413	2,458	85	42,870	1,137	1	161	993
Wyoming	963	56	-	907	117	-	30	346
York	43,757	289	41	43,427	4,542	1,994	3,286	4,855

(continued on following page)

TABLE 6: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1957  
(continued)

County	Lumber and wood products	Furniture and fixtures	Paper and allied products	Printing and publishing	Chemicals and allied products	Petroleum and related products	Rubber and plastics products	Leather and leather products
Total	14,302	21,357	41,286	58,943	45,621	17,545	20,963	31,033
Adams	141	464	264	84	33	-	488	1,633
Allegheny	703	1,352	2,817	7,275	3,972	431	222	54
Armstrong	98	40	-	62	221	9	-	19
Beaver	301	70	105	258	1,344	214	39	-
Bedford	348	-	-	43	11	-	-	-
Berks	296	206	1,553	925	1,146	64	65	1,785
Blair	52	72	2,029	575	117	6	-	1,066
Bradford	244	6	215	385	-	-	-	25
Bucks	173	191	2,262	362	3,176	-	599	71
Butler	175	-	-	159	899	719	449	-
Cambria	280	192	8	387	25	12	-	-
Cameron	4	-	-	5	18	-	-	-
Carbon	39	77	-	72	36	-	-	317
Centre	108	-	21	139	-	4	-	-
Chester	264	30	1,859	574	934	14	794	-
Clarion	169	47	70	46	1	-	149	-
Clearfield	313	14	212	186	11	-	219	283
Clinton	51	153	1,457	92	313	6	-	-
Columbia	149	18	20	105	10	4	-	-
Crawford	182	52	-	226	1,278	10	327	2
Cumberland	59	47	544	179	18	5	467	869
Dauphin	121	121	13	1,499	81	22	-	1,964
Delaware	371	339	3,366	2,165	2,248	5,939	205	112
Elk	301	-	1,044	52	137	-	1	140
Erie	276	1,583	2,596	865	124	130	2,015	96
Fayette	401	80	-	266	365	6	2	-
Forest	109	-	-	7	-	-	-	62
Franklin	154	74	55	158	-	-	95	498
Fulton	53	-	-	4	-	-	-	-
Greene	50	-	-	40	-	-	-	-
Huntingdon	144	-	317	165	-	-	-	-
Indiana	101	-	-	103	-	6	304	402
Jefferson	142	-	-	142	53	7	-	-
Juniata	274	-	-	3	-	-	-	-
Lackawanna	101	363	338	2,263	246	-	1,018	941
Lancaster	478	414	679	1,667	846	30	120	2,999
Lawrence	81	31	10	197	327	10	88	320
Lebanon	51	-	359	411	388	12	93	1,085
Lehigh	233	400	158	946	816	17	32	617
Luzerne	190	445	208	1,148	388	-	654	3,121
Lycoming	605	1,463	688	563	128	8	76	816
McKean	258	570	203	189	257	688	-	107
Mercer	140	95	30	269	42	15	7	-
Mifflin	153	-	-	61	2,242	-	-	-
Monroe	19	55	114	605	126	-	107	93
Montgomery	442	1,145	2,144	1,087	2,536	68	7,016	344
Montour	6	157	-	26	-	7	-	-
Northampton	79	413	1,669	1,370	639	4	61	201
Northumberland	422	1,035	199	309	758	-	-	530
Perry	78	-	-	22	-	-	-	-
Philadelphia	1,404	4,761	10,424	25,908	17,263	6,998	3,124	5,128
Pike	16	-	-	3	-	-	-	-
Potter	139	3	-	14	25	-	9	191
Schuylkill	52	179	263	340	1,094	90	-	716
Snyder	351	45	71	18	-	-	-	64
Somerset	416	12	-	93	14	-	27	80
Sullivan	196	-	-	6	-	-	-	130
Susquehanna	143	99	-	42	-	-	-	271
Tioga	142	-	-	42	21	4	-	1,269
Union	22	588	-	96	-	-	-	-
Venango	179	-	-	443	102	1,097	96	-
Warren	245	569	-	197	32	320	64	-
Washington	94	26	231	334	292	8	55	-
Wayne	147	203	-	28	5	-	-	180
Westmoreland	209	16	156	701	272	251	1,472	-
Wyoming	69	12	-	12	14	-	-	283
York	496	3,030	2,515	1,925	177	310	404	2,149

(continued on following page)

TABLE 6: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1957  
(continued)

County	Stone, clay, and glass products	Primary metal products	Fabricated metal products	Machinery, except electrical	Electrical machinery, equipment, and supplies	Transportation equipment	Instruments and related products	Miscellaneous manufactures
Total	68,377	272,543	123,923	120,190	127,575	74,767	20,631	26,441
Adams	366	199	58	86	177	1	-	-
Allegheny	8,123	83,239	18,717	12,609	25,547	11,440	2,062	2,408
Armstrong	4,923	3	201	238	-	-	-	-
Beaver	2,612	33,666	8,036	884	3,927	50	-	46
Bedford	2	-	20	136	-	-	-	-
Berks	782	6,209	4,032	5,967	1,947	3,145	581	798
Blair	754	20	622	317	1,033	29	1	34
Bradford	1	954	-	1,487	89	-	32	220
Bucks	888	7,412	3,249	1,136	646	307	2,968	166
Butler	1,321	4,075	399	690	346	1,905	222	44
Cambria	500	14,365	2,560	241	107	3,248	-	15
Cameron	-	46	4	15	1,932	-	-	-
Carbon	91	2,887	24	26	1,297	11	-	19
Centre	1,112	1,376	-	165	208	-	4	3
Chester	855	7,884	1,846	1,665	1,369	771	7	271
Clarion	1,398	-	21	14	-	118	-	-
Clearfield	1,686	112	264	856	905	-	-	4
Clinton	49	214	140	9	797	1,645	-	5
Columbia	62	69	561	48	-	2,361	-	31
Crawford	30	2,548	269	833	266	4	45	2,468
Cumberland	131	448	1,256	702	975	-	-	-
Dauphin	283	7,034	2,349	885	1,755	1,985	10	35
Delaware	291	3,465	1,464	9,479	1,450	12,437	282	356
Elk	254	112	498	55	4,981	-	-	-
Erie	166	5,053	4,353	6,189	6,813	6,031	1,531	2,071
Fayette	2,246	526	965	111	20	221	268	7
Forest	362	11	-	3	-	-	-	-
Franklin	101	58	76	3,872	-	148	45	-
Fulton	1	-	-	-	-	-	-	-
Greene	8	34	1	8	-	-	-	-
Huntingdon	1,789	-	11	67	-	-	-	19
Indiana	278	95	1,124	604	-	17	254	67
Jefferson	2,355	10	142	82	1,393	19	-	40
Juniata	115	-	2	-	-	-	-	-
Lackawanna	122	75	1,613	837	2,413	24	1	1,982
Lancaster	1,818	1,399	4,704	4,178	4,847	549	1,805	1,217
Lawrence	3,235	3,243	2,008	4,294	9	449	5	100
Lebanon	463	1,623	2,681	120	-	-	-	46
Lehigh	1,710	702	2,723	3,250	5,220	4,027	93	319
Luzerne	210	124	2,251	2,193	902	551	130	1,120
Lycoming	151	1,586	1,351	1,003	2,140	2,882	62	302
McKean	1,095	8	1,578	692	1,262	-	4	474
Mercer	104	10,242	1,105	2,662	8,531	1,045	39	240
Mifflin	166	2,486	77	528	-	-	-	12
Monroe	34	112	249	296	247	-	16	830
Montgomery	4,869	8,332	10,112	5,540	4,372	1,877	445	727
Montour	-	1	-	733	-	1,207	-	-
Northampton	4,272	21,925	2,431	1,340	964	-	-	1,115
Northumberland	319	245	138	127	-	1,008	-	51
Perry	-	-	-	7	9	-	-	26
Philadelphia	3,637	5,758	24,153	24,556	28,222	14,354	7,443	6,796
Pike	-	-	1	1	-	4	-	-
Potter	1	-	12	-	502	-	38	-
Schuylkill	198	1,528	798	212	3	177	8	138
Snyder	118	-	-	-	36	60	-	-
Somerset	98	59	75	49	-	-	88	-
Sullivan	-	-	-	-	-	-	-	-
Susquehanna	9	185	-	147	749	-	-	-
Tioga	1	35	664	-	648	147	1	10
Union	-	-	142	19	15	-	-	-
Venango	386	588	306	4,471	-	40	19	-
Warren	43	939	1,118	205	1,490	133	-	-
Washington	5,948	9,374	1,283	509	2,562	-	-	5
Wayne	22	-	6	441	91	-	-	2
Westmoreland	4,329	19,061	5,684	4,973	2,038	27	1,302	87
Wyoming	2	-	-	16	6	-	-	-
York	1,082	789	3,396	7,312	2,317	313	820	1,715



TABLE 7: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1958

County	Total employed	Mines and quarries(1)	Railroad repair shops	Total manufacturing	Food and kindred products	Tobacco manufactures	Textile mill products	Apparel and related products
Total	1,440,499	75,103	19,993	1,345,403	119,981	13,520	78,228	157,479
Adams	6,843	293	1	6,549	1,784	102	69	499
Allegheny	176,495	3,000	3,609	169,886	18,156	11	52	1,001
Armstrong	7,787	1,633	2	6,152	1,275	-	-	-
Beaver	45,793	250	843	44,700	666	-	-	72
Bedford	1,614	390	-	1,224	91	-	2	601
Berks	49,348	689	692	47,967	4,761	118	10,716	4,490
Blair	15,119	185	4,660	10,274	1,612	-	1,193	569
Bradford	4,312	26	290	3,996	246	-	637	68
Bucks	29,337	358	-	28,979	1,168	40	2,000	3,017
Butler	11,547	919	59	10,569	300	-	-	213
Cambria	28,377	7,371	267	20,739	1,298	6	-	2,342
Cameron	1,936	46	13	1,877	10	-	-	-
Carbon	8,769	889	208	7,672	174	-	515	2,825
Centre	4,794	478	11	4,305	291	518	157	525
Chester	24,476	165	248	24,063	2,906	-	966	814
Clarion	3,093	864	24	2,205	139	-	-	-
Clearfield	9,210	3,328	223	5,659	501	-	181	658
Clinton	6,431	189	352	5,890	167	-	552	4
Columbia	10,202	1,076	4	9,122	1,426	389	3,046	1,693
Crawford	8,034	19	204	7,811	593	-	32	-
Cumberland	10,747	102	1,126	9,519	1,295	9	1,227	972
Dauphin	25,623	304	886	24,433	5,880	139	67	3,401
Delaware	46,900	212	53	46,635	1,413	-	2,347	1,588
Elk	7,380	257	9	7,114	141	-	-	-
Erie	35,485	15	236	35,234	2,454	2	-	272
Fayette	9,924	2,363	207	7,354	691	13	34	828
Forest	655	-	-	655	-	-	-	-
Franklin	9,601	94	110	9,397	1,489	-	417	2,691
Fulton	128	29	-	99	61	-	-	-
Greene	6,002	5,441	-	561	167	-	-	292
Huntingdon	3,266	345	33	2,888	208	-	-	764
Indiana	6,831	3,307	19	3,505	273	-	-	587
Jefferson	5,806	941	238	4,627	230	-	-	184
Juniata	1,046	10	-	1,036	152	-	-	519
Lackawanna	32,272	3,473	616	28,183	1,988	1,218	3,170	9,927
Lancaster	44,502	257	9	44,236	4,060	637	1,608	6,527
Lawrence	13,385	627	202	12,556	336	-	228	105
Lebanon	14,613	1,139	35	13,439	1,831	-	1,386	3,474
Lehigh	34,029	17	18	33,994	3,158	472	3,940	6,990
Luzerne	47,846	9,785	327	37,734	3,306	3,524	3,477	14,852
Lycoming	17,178	109	173	16,896	845	-	1,877	1,994
McKean	6,713	17	-	6,696	228	-	-	-
Mercer	19,938	252	316	19,370	463	-	-	36
Mifflin	6,424	190	50	6,184	515	-	-	662
Monroe	4,113	30	-	4,083	81	-	276	595
Montgomery	62,866	319	89	62,458	3,878	-	4,179	4,266
Montour	2,170	33	-	2,137	4	-	339	200
Northampton	46,049	166	333	45,550	1,156	-	2,335	10,274
Northumberland	16,525	3,029	130	13,366	2,134	329	1,000	4,847
Perry	755	9	-	746	161	-	-	406
Philadelphia	279,544	24	2,129	277,391	33,481	3,785	23,457	41,079
Pike	83	-	-	83	12	-	16	18
Potter	996	14	-	982	43	-	60	-
Schuylkill	28,039	8,543	335	19,161	1,384	236	2,428	9,335
Snyder	2,004	29	-	1,975	198	-	387	736
Somerset	5,602	2,437	39	3,126	552	6	-	1,600
Sullivan	604	25	-	579	97	-	-	145
Susquehanna	2,381	3	112	2,266	144	-	24	435
Tioga	3,045	126	-	2,919	178	-	-	-
Union	1,715	48	1	1,666	249	-	296	150
Venango	7,303	205	63	7,035	134	-	-	-
Warren	5,150	16	11	5,123	229	-	-	-
Washington	25,000	6,070	266	18,664	648	-	-	58
Wayne	2,419	50	-	2,369	61	-	165	937
Westmoreland	40,470	2,178	74	38,218	1,258	-	120	961
Wyoming	1,014	51	-	963	120	-	24	362
York	42,841	244	38	42,559	5,031	1,966	3,226	5,019

(1) Coal mining employment was taken from the 1958 Annual Report of the Bureau of Mines.

(continued on following page)

TABLE 7: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1958  
(continued)

County	Lumber and wood products	Furniture and fixtures	Paper and allied products	Printing and publishing	Chemicals and allied products	Petroleum and related products	Rubber and plastics products	Leather and leather products
Total	13,020	19,877	39,788	62,190	45,635	17,170	19,925	32,701
Adams	124	407	252	87	36	-	556	1,722
Allegheny	767	1,369	2,644	7,096	3,483	399	290	54
Armstrong	60	18	-	74	174	8	-	17
Beaver	262	1	-	268	1,170	208	65	-
Bedford	328	-	-	41	11	-	-	-
Berks	277	368	1,465	915	1,100	65	68	2,384
Blair	39	67	2,016	463	141	8	-	1,628
Bradford	197	-	221	282	-	-	-	20
Bucks	250	514	2,083	368	3,099	-	613	71
Butler	154	9	-	170	1,027	766	358	-
Cambria	246	85	9	388	23	14	-	-
Cameron	8	-	-	4	-	-	-	-
Carbon	41	58	-	60	40	-	-	373
Centre	93	-	16	148	-	10	-	-
Chester	265	33	1,761	667	1,268	14	429	-
Clarion	128	147	71	40	1	-	121	-
Clearfield	228	13	219	215	12	-	276	259
Clinton	57	121	1,515	94	411	7	-	-
Columbia	142	21	21	106	10	7	-	-
Crawford	143	25	-	233	1,312	-	367	2
Cumberland	71	43	522	180	3	8	534	874
Dauphin	110	94	12	1,501	68	20	-	1,927
Delaware	418	267	3,218	2,417	2,616	5,579	128	99
Elk	258	-	1,070	53	160	-	2	140
Erie	248	967	2,357	882	223	137	2,126	75
Fayette	728	15	-	262	333	17	3	-
Forest	95	-	-	7	-	-	92	63
Franklin	139	59	53	155	-	-	106	444
Fulton	33	-	-	4	-	-	-	-
Greene	24	-	-	56	-	-	-	-
Huntingdon	79	-	300	163	-	-	-	78
Indiana	103	-	-	106	-	7	321	398
Jefferson	115	-	-	137	40	7	-	-
Juniata	243	-	-	3	-	-	-	-
Lackawanna	95	380	341	2,401	209	-	870	1,188
Lancaster	432	408	655	1,671	910	29	72	3,423
Lawrence	75	30	8	206	321	12	117	303
Lebanon	32	-	337	395	329	12	111	1,299
Lehigh	183	234	165	943	792	56	41	673
Luzerne	169	443	198	1,149	297	-	527	3,047
Lycoming	624	1,254	676	579	116	9	81	723
McKean	131	405	220	223	183	648	-	105
Mercer	105	41	25	235	42	10	8	-
Mifflin	123	76	-	64	2,328	-	-	64
Monroe	15	70	112	662	91	8	-	196
Montgomery	417	1,011	2,316	1,494	2,635	57	6,426	273
Montour	5	176	-	28	-	7	-	-
Northampton	64	194	1,984	1,422	628	5	92	146
Northumberland	405	1,046	211	327	845	-	2	560
Perry	87	-	-	23	-	-	-	-
Philadelphia	1,308	4,052	9,268	28,326	17,053	6,799	3,188	4,623
Pike	20	-	-	5	8	-	-	-
Potter	143	18	-	17	31	-	9	118
Schuylkill	80	149	249	319	1,065	125	-	772
Snyder	38	239	66	15	-	-	-	56
Somerset	324	12	-	96	14	31	15	79
Sullivan	179	-	-	9	-	-	-	149
Susquehanna	106	75	-	44	-	-	-	367
Tioga	120	-	-	42	26	6	-	1,253
Union	8	658	-	82	-	-	-	-
Venango	94	-	2	412	94	1,102	70	-
Warren	243	510	-	211	33	302	62	-
Washington	69	45	398	414	318	15	59	-
Wayne	142	202	-	27	8	-	-	280
Westmoreland	218	52	199	693	218	230	1,351	-
Wyoming	63	-	-	10	14	-	-	332
York	430	3,396	2,533	2,001	266	426	369	2,044

(continued on following page)

TABLE 7: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1958  
(continued)

County	Stone, clay, and glass products	Primary metal products	Fabricated metal products	Machinery, except electrical	Electrical machinery, equipment, and supplies	Transportation equipment	Instruments and related products	Miscellaneous manufactures
Total	60,707	223,298	111,195	103,861	119,824	56,887	19,269	30,848
Adams	368	214	71	89	157	2	-	10
Allegheny	6,191	65,349	17,910	10,570	20,856	9,354	2,018	2,316
Armstrong	4,105	1	243	177	-	-	-	-
Beaver	2,355	28,213	7,001	578	3,565	230	-	46
Bedford	2	-	23	125	-	-	-	-
Berks	738	5,825	2,593	4,651	3,573	2,679	374	807
Blair	518	83	512	331	1,018	30	2	44
Bradford	5	859	1	1,158	50	-	39	213
Bucks	1,058	6,540	1,612	1,274	1,166	348	2,635	1,123
Butler	1,170	3,669	303	711	311	1,100	213	95
Cambria	449	11,800	2,168	212	97	1,555	31	16
Cameron	-	37	22	21	1,774	-	-	1
Carbon	101	2,236	22	24	1,141	-	-	62
Centre	933	1,224	5	141	222	-	20	2
Chester	545	7,361	1,561	1,222	3,033	825	101	292
Clarion	1,405	-	31	11	-	101	-	10
Clearfield	1,331	-	224	206	829	-	504	3
Clinton	56	213	115	9	751	1,809	-	9
Columbia	58	64	557	40	-	1,524	-	18
Crawford	40	1,844	260	762	51	37	44	2,066
Cumberland	153	428	1,855	362	968	12	-	3
Dauphin	254	5,077	2,035	744	1,490	1,574	10	30
Delaware	296	2,429	2,352	11,014	1,294	7,645	219	1,296
Elk	239	112	526	198	4,215	-	-	-
Erie	217	3,812	4,407	4,040	4,825	4,806	1,521	1,863
Fayette	2,470	216	1,140	153	-	160	283	8
Forest	379	16	-	3	-	-	-	-
Franklin	101	-	71	3,492	-	164	12	4
Fulton	1	-	-	-	-	-	-	-
Greene	6	-	1	15	-	-	-	-
Huntingdon	1,223	-	10	41	-	-	-	22
Indiana	257	91	452	596	-	14	294	6
Jefferson	2,329	45	130	59	1,290	15	-	46
Juniata	117	-	2	-	-	-	-	-
Lackawanna	93	52	1,467	761	2,300	51	2	1,670
Lancaster	485	1,473	4,467	4,027	4,365	1,728	1,564	5,695
Lawrence	2,946	2,204	1,682	3,478	10	363	49	83
Lebanon	441	1,347	2,306	133	-	-	-	6
Lehigh	1,528	666	2,034	2,319	5,402	3,475	79	844
Luzerne	280	520	1,759	2,229	343	500	25	1,089
Lycoming	113	320	2,417	1,329	1,581	2,030	48	280
McKean	1,001	6	1,381	660	1,126	-	2	377
Mercer	99	8,045	1,077	2,090	6,256	428	35	375
Mifflin	112	1,622	87	525	-	-	-	6
Monroe	48	107	652	266	242	-	21	641
Montgomery	4,704	7,117	9,957	5,169	5,366	1,782	500	911
Montour	-	2	-	670	-	706	-	-
Northampton	4,160	17,719	2,198	803	1,256	-	-	1,114
Northumberland	291	231	163	90	-	765	-	120
Perry	-	-	15	10	-	20	-	24
Philadelphia	3,063	5,917	17,598	21,083	30,578	10,349	6,389	5,995
Pike	-	-	1	-	-	3	-	-
Potter	1	-	8	-	486	-	48	-
Schuylkill	171	1,491	854	213	8	152	6	124
Snyder	120	-	68	-	-	52	-	-
Somerset	107	33	114	51	-	-	92	-
Sullivan	-	-	-	-	-	-	-	-
Susquehanna	33	169	-	167	702	-	-	-
Tioga	537	31	575	-	-	76	1	74
Union	21	18	162	22	-	-	-	-
Venango	416	566	268	3,591	239	27	20	-
Warren	52	1,750	904	193	518	79	-	37
Washington	5,127	7,523	1,337	544	2,037	-	62	10
Wayne	35	-	397	4	108	-	-	3
Westmoreland	4,180	15,952	5,145	3,745	2,549	32	1,242	73
Wyoming	5	-	-	19	14	-	-	-
York	1,068	659	3,887	6,641	1,662	285	764	886



TABLE 8: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1959

County	Total employment	Mines and quarries <sup>(1)</sup>	Railroad repair shops	Total manufacturing	Food and kindred products	Tobacco manufactures	Textile mill products	Apparel and related products
Total	1,492,877	67,982	23,371	1,401,524	119,939	13,468	82,528	167,993
Adams	7,203	273	1	6,929	1,708	99	85	525
Allegheny	177,598	2,651	3,577	171,370	18,037	5	72	951
Armstrong	7,549	1,481	1	6,067	826	-	-	-
Beaver	42,866	214	818	41,834	661	-	117	69
Bedford	1,698	355	-	1,343	89	-	4	628
Berks	54,607	647	877	53,083	4,986	126	10,827	4,862
Blair	20,454	190	7,601	12,663	1,749	-	1,498	540
Bradford	4,774	25	302	4,447	272	-	645	38
Bucks	30,533	363	135	30,035	1,335	33	1,759	3,013
Butler	11,769	732	45	10,992	288	-	-	212
Cambria	25,562	6,010	272	19,280	1,230	-	-	2,741
Cameron	1,814	44	10	1,760	5	-	-	-
Carbon	8,460	665	226	7,569	170	-	584	2,774
Centre	5,135	477	10	4,648	276	484	159	483
Chester	25,891	176	257	25,458	2,894	-	1,173	690
Clarion	3,311	871	24	2,416	158	-	-	-
Clearfield	9,143	2,853	475	5,815	489	-	299	844
Clinton	6,884	178	414	6,292	178	-	543	2
Columbia	11,527	865	3	10,659	1,437	685	3,227	1,842
Crawford	8,462	19	293	8,150	522	-	26	-
Cumberland	11,081	129	1,238	9,714	1,296	8	1,335	970
Dauphin	25,685	312	837	24,536	5,920	244	85	3,274
Delaware	47,553	189	47	47,317	1,640	-	2,352	1,770
Elk	7,848	240	-	7,608	142	-	-	-
Erie	37,350	19	170	37,161	2,309	1	-	163
Fayette	10,094	2,260	173	7,661	854	13	35	902
Forest	647	20	-	627	-	-	-	-
Franklin	9,951	91	100	9,760	1,493	-	443	2,681
Fulton	448	-	-	448	9	-	-	358
Greene	5,817	5,208	-	609	177	-	-	305
Huntingdon	3,571	334	-	3,237	214	-	-	764
Indiana	6,860	3,211	21	3,628	249	-	-	724
Jefferson	6,575	873	228	5,474	133	-	-	470
Juniata	1,158	8	-	1,150	170	-	-	630
Lackawanna	34,742	3,261	507	30,974	2,133	716	3,019	10,291
Lancaster	47,911	252	8	47,651	4,246	855	2,209	6,274
Lawrence	13,157	562	228	12,367	374	-	176	121
Lebanon	14,696	947	33	13,716	1,458	-	1,718	3,358
Lehigh	37,556	16	16	37,524	3,425	478	4,719	7,427
Luzerne	49,637	8,489	294	40,854	3,430	3,167	3,914	16,449
Lycoming	18,439	102	149	18,188	887	-	2,140	2,445
McKean	7,398	20	-	7,378	231	-	-	-
Mercer	20,499	208	413	19,878	514	-	-	61
Mifflin	6,860	169	51	6,640	501	-	-	651
Monroe	4,514	21	-	4,493	102	-	317	721
Montgomery	69,124	286	85	68,753	4,510	-	3,807	4,331
Montour	2,265	32	-	2,233	3	-	427	195
Northampton	43,993	140	329	43,524	1,430	-	2,409	11,031
Northumberland	16,719	2,862	143	13,714	2,185	329	915	5,103
Perry	818	9	-	809	153	-	-	457
Philadelphia	289,515	29	2,006	287,480	33,713	3,821	24,224	44,454
Pike	83	-	-	83	12	-	14	18
Potter	986	10	-	976	26	-	50	-
Schuylkill	29,325	7,955	307	21,063	1,389	378	2,744	10,000
Snyder	1,886	39	-	1,847	94	-	328	736
Somerset	5,992	2,209	33	3,750	486	6	-	2,197
Sullivan	643	22	-	621	82	-	-	204
Susquehanna	2,613	-	97	2,516	134	-	18	420
Tioga	3,247	107	-	3,140	237	-	-	-
Union	1,738	49	1	1,688	128	-	333	138
Venango	7,095	192	52	6,851	127	-	-	-
Warren	5,177	15	12	5,150	233	-	-	-
Washington	24,537	5,660	344	18,533	616	-	-	59
Wayne	2,548	48	-	2,500	59	-	187	1,146
Westmoreland	44,243	2,003	69	42,171	1,311	-	108	902
Wyoming	1,127	46	-	1,081	122	-	20	490
York	43,916	239	39	43,638	3,672	2,020	3,464	5,089

(1) Coal Mining employment was taken from the 1959 Annual Report of the Bureau of Mines.

(continued on following page)

TABLE 8: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1959  
(continued)

County	Lumber and wood products	Furniture and fixtures	Paper and allied products	Printing and publishing	Chemicals and allied products	Petroleum and related products	Rubber and plastics products	Leather and leather products
Total	13,459	23,223	41,053	64,590	48,514	17,544	22,690	35,747
Adams	207	416	248	100	45	5	612	1,878
Allegheny	614	1,628	2,301	7,600	3,520	470	510	56
Armstrong	114	35	-	55	271	10	-	18
Beaver	115	19	-	277	1,304	160	129	-
Bedford	342	-	-	40	47	-	-	-
Berks	297	705	1,458	908	1,155	92	99	2,754
Blair	47	61	2,072	515	126	-	-	2,384
Bradford	225	-	222	297	-	-	-	20
Bucks	265	1,079	2,141	396	3,549	-	738	72
Butler	65	123	-	183	814	760	431	-
Cambria	266	137	64	387	21	13	-	-
Cameron	8	-	-	5	-	-	-	-
Carbon	53	86	-	64	41	-	-	178
Centre	92	-	15	219	24	6	-	-
Chester	147	259	1,689	749	1,293	16	463	-
Clarion	157	149	84	41	-	4	160	-
Clearfield	262	14	226	163	10	-	254	235
Clinton	54	157	1,476	93	444	5	-	-
Columbia	156	18	49	109	11	13	-	-
Crawford	306	23	-	181	1,270	-	370	12
Cumberland	70	36	608	196	32	23	529	871
Dauphin	105	116	10	1,419	71	3	-	2,141
Delaware	355	349	3,308	2,636	2,930	5,362	113	78
Elk	262	-	1,106	55	134	-	-	140
Erie	338	1,213	2,334	885	176	164	2,628	76
Fayette	818	17	-	268	382	11	-	-
Forest	105	-	-	8	-	-	114	51
Franklin	174	133	52	154	-	-	104	443
Fulton	34	-	-	5	-	-	-	-
Greene	39	-	-	58	-	-	-	-
Huntingdon	123	-	299	148	-	7	-	152
Indiana	102	-	-	117	-	6	329	88
Jefferson	143	6	-	133	43	5	-	576
Juniata	60	167	-	3	-	-	-	-
Lackawanna	105	363	351	2,140	178	-	924	1,846
Lancaster	568	372	648	1,750	991	43	799	3,437
Lawrence	85	48	7	202	334	36	154	325
Lebanon	57	12	355	373	432	13	183	1,559
Lehigh	166	257	150	909	966	66	45	721
Luzerne	145	725	218	1,236	192	81	749	3,328
Lycoming	696	1,382	703	569	147	6	130	887
McKean	168	461	199	228	245	662	-	98
Mercer	129	38	38	266	49	11	7	-
Mifflin	102	47	-	64	2,731	5	-	75
Monroe	13	94	112	576	110	8	97	224
Montgomery	463	1,063	2,660	1,626	3,464	76	6,544	367
Montour	5	224	-	30	-	5	-	-
Northampton	80	271	1,989	1,494	654	6	101	155
Northumberland	328	1,072	246	321	961	-	2	660
Perry	93	-	-	22	-	-	-	-
Philadelphia	1,102	4,106	9,674	29,848	17,161	6,540	3,384	4,345
Pike	16	-	-	5	14	1	-	-
Potter	172	21	-	18	30	-	11	110
Schuylkill	122	186	268	338	1,173	76	-	739
Snyder	49	204	70	17	-	-	-	51
Somerset	283	32	-	93	14	-	24	112
Sullivan	181	-	-	-	-	-	-	154
Susquehanna	257	99	-	39	-	-	-	466
Tioga	111	4	-	38	26	9	-	1,153
Union	10	724	-	88	-	17	-	-
Venango	165	-	2	391	101	1,085	66	-
Warren	262	567	-	145	35	318	88	-
Washington	88	86	417	419	263	8	79	-
Wayne	121	206	-	30	7	-	-	223
Westmoreland	274	7	407	737	240	932	1,312	-
Wyoming	53	-	-	11	-	-	-	347
York	470	3,606	2,777	2,100	283	405	408	2,142

(continued on following page)

TABLE 8: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1959  
(continued)

County	Stone, clay, and glass products	Primary metal products	Fabricated metal products	Machinery, except electrical	Electrical machinery, equipment, and supplies	Transportation equipment	Instruments and related products	Miscellaneous manufactures
Total	65,611	225,935	112,676	109,471	126,801	56,281	22,220	31,781
Adams	384	265	75	96	169	2	-	10
Allegheny	7,575	67,788	17,021	10,779	19,887	7,953	2,165	2,438
Armstrong	4,455	1	254	27	-	-	-	1
Beaver	2,523	26,847	5,740	799	3,028	-	-	46
Bedford	13	-	30	150	-	-	-	-
Berks	778	6,277	2,831	4,755	5,283	3,462	468	960
Blair	852	111	654	465	1,165	30	340	54
Bradford	-	933	10	1,473	40	13	49	210
Bucks	1,344	5,891	1,558	1,232	1,377	1,147	2,972	134
Butler	1,205	4,151	334	802	331	944	230	119
Cambria	459	11,202	1,567	223	64	806	45	55
Cameron	-	39	74	22	1,607	-	-	-
Carbon	89	2,239	21	29	1,213	-	-	28
Centre	941	1,318	-	165	400	-	64	2
Chester	795	7,007	1,614	3,175	2,447	830	7	210
Clarion	1,414	-	54	8	75	109	-	3
Clearfield	1,423	79	243	94	686	-	491	3
Clinton	57	230	22	11	884	2,072	-	64
Columbia	66	87	231	41	91	2,248	338	10
Crawford	38	1,828	755	396	93	197	43	2,090
Cumberland	211	408	1,606	348	1,156	10	-	1
Dauphin	275	5,141	2,060	831	1,691	1,111	8	31
Delaware	288	2,414	2,915	10,139	1,387	7,616	203	1,462
Elk	220	774	12	217	4,546	-	-	-
Erie	263	4,122	4,768	4,603	5,270	3,925	1,762	2,161
Fayette	2,130	328	1,075	182	3	331	304	8
Forest	334	12	-	3	-	-	-	-
Franklin	140	-	140	3,589	2	191	17	4
Fulton	42	-	-	-	-	-	-	-
Greene	16	-	-	14	-	-	-	-
Huntingdon	1,455	-	46	7	-	-	-	22
Indiana	292	88	428	636	-	-	494	75
Jefferson	2,364	71	169	145	1,157	15	-	44
Juniata	109	-	3	-	-	-	-	8
Lackawanna	246	52	2,191	867	3,276	551	2	1,723
Lancaster	628	1,652	4,360	4,334	4,805	1,825	1,843	6,012
Lawrence	2,913	1,892	1,648	3,443	11	425	42	131
Lebanon	454	1,411	2,097	215	-	-	-	21
Lehigh	1,491	779	2,181	3,417	5,436	3,801	62	1,028
Luzerne	304	576	1,917	1,980	595	736	20	1,092
Lycoming	153	325	2,377	1,578	1,588	1,807	56	312
McKean	1,011	5	1,381	663	1,620	-	3	403
Mercer	153	8,231	1,171	2,151	6,211	531	35	282
Mifflin	115	1,737	69	538	-	-	-	5
Monroe	61	113	716	248	268	-	15	698
Montgomery	4,995	8,064	10,622	5,787	6,405	2,195	788	986
Montour	4	1	-	-	-	731	-	608
Northampton	3,988	14,592	1,955	861	1,200	11	-	1,297
Northumberland	319	215	192	85	-	557	2	222
Perry	6	-	30	10	-	7	-	31
Philadelphia	3,682	4,519	20,117	23,517	31,539	9,144	7,004	5,586
Pike	-	-	1	-	-	2	-	-
Potter	1	-	-	-	503	-	34	-
Schuylkill	248	1,936	920	212	11	178	7	138
Snyder	110	-	135	-	-	53	-	-
Somerset	127	42	165	58	-	27	84	-
Sullivan	-	-	-	-	-	-	-	-
Susquehanna	45	190	11	158	679	-	-	-
Tioga	554	281	453	100	-	76	1	97
Union	25	20	175	30	-	-	-	-
Venango	429	634	271	3,263	248	50	19	-
Warren	64	1,738	825	183	577	100	-	15
Washington	4,868	8,532	1,073	631	1,319	-	67	8
Wayne	18	-	345	4	126	-	-	28
Westmoreland	4,947	17,950	5,045	2,090	4,313	86	1,436	74
Wyoming	6	-	-	18	14	-	-	-
York	1,096	797	3,923	7,574	2,005	376	700	731



TABLE 9: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1960

County	Total employed	Mines and quarries <sup>(1)</sup>	Railroad repair shops	Total manufacturing	Food and kindred products	Tobacco manufactures	Textile mill products	Apparel and related products
Total	1,499,846	60,589	21,498	1,417,759	120,165	12,794	78,330	172,027
Adams	7,607	285	1	7,321	1,820	92	87	526
Allegheny	177,212	2,619	3,289	171,304	17,502	9	27	927
Armstrong	7,284	1,444	1	5,839	776	-	-	-
Beaver	45,909	229	752	44,928	700	-	175	68
Bedford	1,636	315	-	1,321	73	-	2	642
Berks	54,613	818	1,040	52,755	4,997	6	10,338	5,152
Blair	17,977	188	6,228	11,561	1,626	-	1,378	636
Bradford	5,024	13	286	4,725	295	-	631	56
Bucks	32,324	355	161	31,808	1,428	27	1,878	2,909
Butler	11,833	687	54	11,092	304	-	-	215
Cambria	27,542	4,831	241	22,470	1,356	-	-	2,858
Cameron	1,691	42	10	1,639	8	-	-	-
Carbon	8,912	800	201	7,911	156	-	615	3,080
Centre	5,077	402	8	4,667	295	445	195	619
Chester	26,722	166	250	26,306	4,049	-	803	974
Clarion	3,475	861	22	2,592	169	-	-	-
Clearfield	8,996	2,713	506	5,777	494	-	297	896
Clinton	7,246	165	404	6,677	192	-	581	243
Columbia	11,756	600	1	11,155	1,483	726	3,156	1,981
Crawford	8,587	13	299	8,275	540	-	20	-
Cumberland	10,825	115	1,256	9,454	1,332	8	1,324	1,048
Dauphin	25,315	330	819	24,166	5,915	257	83	3,200
Delaware	48,488	185	47	48,256	1,651	-	2,368	1,404
Elk	6,886	226	-	6,660	144	-	-	-
Erie	36,581	19	201	36,361	2,299	1	-	164
Fayette	10,382	2,200	121	8,061	758	13	58	1,015
Forest	617	32	-	585	-	-	-	-
Franklin	10,534	94	106	10,334	1,561	-	399	2,856
Fulton	449	66	-	383	17	-	-	332
Greene	5,333	4,707	-	626	155	-	-	330
Huntingdon	3,836	373	-	3,463	213	-	-	725
Indiana	6,452	2,684	16	3,752	261	-	-	696
Jefferson	6,145	583	188	5,374	135	-	-	502
Juniata	1,331	10	-	1,321	155	-	-	717
Lackawanna	34,164	2,956	498	30,710	2,152	659	2,954	10,699
Lancaster	45,589	227	17	45,345	4,140	860	2,139	6,523
Lawrence	13,791	580	216	12,995	457	-	107	120
Lebanon	15,643	1,115	31	14,497	1,477	-	1,463	3,645
Lehigh	37,898	17	8	37,873	3,528	461	4,496	7,092
Luzerne	48,367	6,076	268	42,023	3,531	3,263	3,525	17,031
Lycoming	18,443	107	137	18,199	904	-	2,084	2,356
McKean	7,409	11	-	7,398	214	-	-	-
Mercer	21,334	223	446	20,665	549	-	-	67
Mifflin	6,462	182	45	6,235	424	-	-	651
Monroe	4,627	21	-	4,606	104	-	397	779
Montgomery	74,231	322	90	73,819	4,347	40	3,777	4,442
Montour	2,296	34	-	2,262	3	-	392	210
Northampton	47,543	134	313	47,096	1,381	-	2,346	12,171
Northumberland	17,198	2,819	144	14,235	2,211	275	868	4,917
Perry	845	9	-	836	146	-	-	487
Philadelphia	288,301	28	1,918	286,355	32,291	3,359	22,802	43,563
Pike	85	-	-	85	12	-	13	19
Potter	1,046	9	-	1,037	30	-	56	-
Schuylkill	28,564	6,964	293	21,307	1,564	371	2,425	10,702
Snyder	2,009	35	-	1,974	125	-	356	777
Somerset	5,464	1,753	42	3,669	500	5	-	1,959
Sullivan	648	21	-	627	70	-	-	237
Susquehanna	2,539	4	92	2,443	133	-	15	407
Tioga	3,017	106	-	2,911	238	-	-	-
Union	1,531	46	1	1,484	140	-	247	137
Venango	7,629	152	52	7,425	117	-	-	-
Warren	5,720	15	10	5,695	235	-	-	-
Washington	23,613	5,294	269	18,050	626	-	-	91
Wayne	2,626	40	-	2,586	57	-	204	1,179
Westmoreland	41,371	1,838	64	39,469	1,267	-	42	962
Wyoming	1,111	52	-	1,059	123	-	14	526
York	44,135	229	36	43,870	4,210	1,917	3,193	5,507

(1) Coal mining employment was taken from the 1960 Annual Report of the Bureau of Mines.

(continued on following page)

TABLE 9: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1960  
(continued)

County	Lumber and wood products	Furniture and fixtures	Paper and allied products	Printing and publishing	Chemicals and allied products	Petroleum and related products	Rubber and plastics products	Leather and leather products
Total	12,678	23,277	41,770	66,435	50,488	15,989	21,841	34,132
Adams	204	420	237	109	27	17	648	2,078
Allegheny	513	1,353	2,380	8,145	4,042	442	606	37
Armstrong	119	40	-	61	397	11	-	15
Beaver	41	11	-	253	1,296	123	76	-
Bedford	330	-	-	44	13	-	-	-
Berks	277	657	1,457	949	967	108	124	2,437
Blair	51	54	2,120	540	130	-	-	1,669
Bradford	199	-	293	264	-	32	24	77
Bucks	273	991	2,149	464	3,699	2	734	69
Butler	63	109	-	177	594	842	385	-
Cambria	233	122	54	380	25	14	-	90
Cameron	4	-	-	5	-	-	-	-
Carbon	46	75	-	61	41	-	-	259
Centre	93	-	20	220	73	8	-	-
Chester	138	286	1,684	849	1,246	16	395	-
Clarion	157	158	98	39	-	6	153	-
Clearfield	239	16	226	155	8	3	186	121
Clinton	21	160	1,500	87	430	6	-	-
Columbia	151	18	55	110	11	37	-	-
Crawford	149	24	-	184	1,322	-	436	-
Cumberland	67	44	635	182	27	14	513	840
Dauphin	131	111	10	1,392	70	2	-	2,169
Delaware	326	325	3,567	2,813	3,054	5,154	165	100
Elk	180	-	1,084	63	170	-	-	140
Erie	400	1,252	2,292	900	164	154	2,659	83
Fayette	926	11	82	268	339	12	3	-
Forest	104	-	-	8	-	-	109	51
Franklin	140	128	52	159	-	3	101	381
Fulton	28	-	-	5	-	-	-	-
Greene	38	-	-	62	-	-	-	-
Huntingdon	143	-	291	152	-	7	-	374
Indiana	142	41	-	111	-	6	337	70
Jefferson	138	-	-	130	19	7	-	450
Juniata	63	287	-	4	-	-	-	-
Lackawanna	111	417	367	2,233	189	-	1,025	1,529
Lancaster	524	354	533	1,828	1,001	43	58	3,329
Lawrence	42	42	5	200	315	61	166	317
Lebanon	38	260	371	377	461	14	188	1,459
Lehigh	138	237	144	1,033	1,001	74	55	689
Luzerne	145	806	220	1,202	195	10	786	3,583
Lycoming	729	1,398	687	561	166	8	128	782
McKean	195	476	207	222	335	675	-	87
Mercer	131	27	32	247	50	10	9	-
Mifflin	101	44	-	68	2,549	5	-	82
Monroe	12	94	114	556	119	6	92	211
Montgomery	381	1,060	2,814	1,405	4,147	77	6,584	219
Montour	6	208	-	26	-	6	-	-
Northampton	61	240	1,821	1,624	627	7	106	168
Northumberland	309	943	235	326	1,023	-	1	998
Perry	100	-	-	23	-	-	-	-
Philadelphia	1,044	4,445	10,050	30,531	17,959	5,798	3,191	3,718
Pike	16	-	-	4	11	1	-	-
Potter	186	22	-	31	31	-	18	110
Schuylkill	64	198	251	330	1,166	88	-	725
Snyder	47	227	71	17	-	-	-	69
Somerset	312	36	-	99	23	29	17	86
Sullivan	173	-	-	-	-	-	-	147
Susquehanna	225	99	-	43	-	-	-	451
Tioga	108	4	-	46	24	4	-	945
Union	12	638	-	66	-	13	-	-
Venango	168	-	1	369	113	1,088	39	326
Warren	263	560	-	187	33	321	89	-
Washington	92	74	428	411	242	8	99	-
Wayne	134	195	-	26	7	-	-	270
Westmoreland	219	7	437	816	215	217	1,114	-
Wyoming	53	-	-	17	-	-	-	301
York	412	3,473	2,696	2,166	322	400	422	2,021

(continued on following page)

TABLE 9: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1960  
(continued)

County	Stone, clay, and glass products	Primary metal products	Fabricated metal products	Machinery, except electrical	Electrical machinery, equipment, and supplies	Transportation equipment	Instruments and related products	Miscellaneous manufactures
Total	63,309	233,000	110,810	110,426	126,799	71,229	23,129	29,131
Adams	380	263	75	95	229	-	-	14
Allegheny	6,633	66,587	19,710	9,758	19,965	8,059	2,132	2,477
Armstrong	4,186	1	201	32	-	-	-	-
Beaver	2,287	30,673	5,263	638	3,279	-	-	45
Bedford	17	-	31	169	-	-	-	-
Berks	766	5,966	2,337	5,583	5,662	3,581	455	936
Blair	702	91	590	466	1,095	32	332	49
Bradford	-	918	21	1,584	38	7	58	228
Bucks	1,323	7,033	1,527	1,442	1,575	1,210	2,925	150
Butler	1,202	4,041	319	768	361	1,347	245	120
Cambria	446	12,583	141	211	62	3,822	57	16
Cameron	-	46	42	18	1,516	-	-	-
Carbon	83	2,276	27	30	1,088	45	-	29
Centre	894	1,205	4	152	351	-	91	2
Chester	822	6,610	1,422	3,333	2,680	675	150	174
Clarion	1,434	-	64	8	143	161	-	2
Clearfield	1,445	66	288	97	737	-	497	6
Clinton	57	214	27	13	883	2,198	-	65
Columbia	81	76	247	92	109	2,433	376	13
Crawford	40	1,904	782	496	190	143	45	2,000
Cumberland	199	403	1,146	347	1,238	11	-	76
Dauphin	275	5,481	2,325	877	759	1,076	6	27
Delaware	258	2,284	1,691	8,547	1,439	11,718	184	1,208
Elk	214	772	9	229	3,655	-	-	-
Erie	273	3,982	4,738	4,657	4,521	4,275	1,794	1,753
Fayette	2,375	294	1,176	254	-	177	287	13
Forest	297	13	-	3	-	-	-	-
Franklin	255	-	147	3,849	2	283	15	3
Fulton	1	-	-	-	-	-	-	-
Greene	27	-	-	14	-	-	-	-
Huntingdon	1,484	10	38	9	-	-	-	17
Indiana	268	78	423	663	-	-	560	96
Jefferson	2,408	87	142	163	1,131	14	-	48
Juniata	80	-	4	-	-	-	-	11
Lackawanna	244	56	1,900	856	3,168	458	2	1,691
Lancaster	605	1,886	5,027	4,299	4,524	1,780	1,972	3,920
Lawrence	2,804	2,416	1,864	3,508	11	367	37	156
Lebanon	413	1,515	2,535	244	6	-	-	31
Lehigh	1,665	848	2,557	3,245	6,021	3,599	99	891
Luzerne	304	680	1,646	2,344	555	1,158	10	1,029
Lycoming	169	285	2,776	1,325	1,616	1,859	54	312
McKean	1,033	6	1,383	631	1,508	-	2	424
Mercer	156	8,753	1,022	2,150	6,249	702	36	475
Mifflin	107	1,534	72	593	-	-	-	5
Monroe	60	111	719	301	281	-	13	637
Montgomery	5,136	7,459	10,567	8,627	8,770	1,959	804	1,204
Montour	6	1	-	-	-	853	-	551
Northampton	3,950	17,076	1,933	1,106	1,215	12	-	1,252
Northumberland	323	600	244	85	-	600	4	273
Perry	10	-	31	10	-	-	-	29
Philadelphia	3,562	5,723	18,223	22,550	29,101	15,520	7,260	5,665
Pike	-	-	4	-	-	5	-	-
Potter	1	-	-	-	518	-	34	-
Schuylkill	358	1,852	678	216	20	172	3	124
Snyder	118	-	105	-	-	62	-	-
Somerset	123	49	254	44	40	24	69	-
Sullivan	-	-	-	-	-	-	-	-
Susquehanna	35	168	11	142	714	-	-	-
Tioga	558	276	410	135	-	144	1	18
Union	26	19	161	25	-	-	-	-
Venango	432	786	281	3,380	256	48	21	-
Warren	63	1,872	981	212	701	160	-	18
Washington	4,843	7,222	1,302	561	1,992	-	53	6
Wayne	20	-	342	1	121	-	-	30
Westmoreland	4,048	17,115	4,860	1,996	4,318	81	1,675	80
Wyoming	7	-	-	18	-	-	-	-
York	918	735	3,965	7,225	2,386	399	771	732

TABLE 10: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1961

County	Total employed	Mines and quarries(1)	Railroad repair shops	Total manufacturing	Food and kindred products	Tobacco manufactures	Textile mill products	Apparel and related products
Total	1,437,564	51,212	16,941	1,369,411	119,921	11,364	75,032	169,669
Adams	7,300	25	1	7,274	1,694	95	89	583
Allegheny	171,198	3,945	2,733	164,520	17,859	3	16	953
Armstrong	6,437	1,059	1	5,377	865	-	-	-
Beaver	42,410	194	551	41,665	603	-	193	70
Bedford	1,676	247	-	1,429	74	-	10	610
Berks	51,267	885	84	50,298	5,058	3	10,052	5,052
Blair	17,644	368	5,023	12,253	1,739	-	1,311	1,051
Bradford	4,593	21	243	4,329	298	-	621	66
Bucks	32,798	318	162	32,318	1,254	25	1,733	3,113
Butler	10,933	679	37	10,217	303	-	-	173
Cambria	22,572	4,387	198	17,987	1,321	-	-	2,864
Cameron	1,644	(D)	9	1,635	-	-	-	-
Carbon	8,647	344	148	8,155	167	-	585	3,372
Centre	5,084	449	6	4,629	321	415	188	670
Chester	27,307	128	228	26,951	3,932	-	709	1,008
Clarion	3,397	633	18	2,746	158	-	-	-
Clearfield	7,893	2,311	412	5,170	507	-	185	836
Clinton	6,339	54	339	5,946	165	-	518	472
Columbia	10,166	284	1	9,881	1,427	678	2,996	1,633
Crawford	9,070	148	345	8,577	492	-	28	-
Cumberland	10,925	57	1,150	9,718	1,359	8	1,320	955
Dauphin	22,880	174	638	22,068	6,236	188	81	3,129
Delaware	46,455	210	31	46,214	1,481	-	2,103	1,458
Elk	7,551	200	-	7,351	186	-	-	-
Erie	35,090	13	164	34,913	2,293	1	-	122
Fayette	9,691	1,398	90	7,603	712	14	128	905
Forest	617	27	-	590	-	-	-	-
Franklin	10,878	435	125	10,318	1,366	-	420	2,941
Fulton	398	(D)	-	398	20	-	-	327
Greene	4,724	4,049	-	675	162	-	-	341
Huntingdon	2,902	120	-	2,782	185	-	-	734
Indiana	6,212	2,311	12	3,889	163	-	-	686
Jefferson	6,112	688	184	5,240	112	-	-	519
Juniata	1,150	(D)	-	1,150	144	-	-	704
Lackawanna	33,890	1,665	347	31,878	2,120	820	3,083	11,636
Lancaster	45,165	314	14	44,837	4,477	502	2,026	6,196
Lawrence	12,821	600	177	12,044	422	-	95	160
Lebanon	14,706	991	27	13,688	1,279	-	1,420	3,259
Lehigh	37,571	46	6	37,519	3,622	399	4,306	7,354
Luzerne	47,709	5,795	226	41,688	3,525	3,032	3,616	16,662
Lycoming	17,895	87	143	17,665	960	-	2,074	2,186
McKean	9,228	1,688	-	7,540	196	-	-	-
Mercer	19,536	180	363	18,993	530	-	-	65
Mifflin	6,004	77	37	5,890	411	-	-	628
Monroe	4,485	9	-	4,476	105	-	301	800
Montgomery	76,176	364	54	75,758	4,482	45	3,777	4,018
Montour	2,311	35	-	2,276	4	-	473	260
Northampton	43,496	125	262	43,109	1,441	-	2,258	11,995
Northumberland	15,754	1,589	90	14,075	2,389	184	818	4,889
Perry	779	(D)	-	779	135	-	-	463
Philadelphia	274,977	153	1,683	273,141	31,509	2,837	20,944	41,449
Pike	117	(D)	-	117	22	-	12	20
Potter	1,114	83	-	1,031	36	-	25	-
Schuylkill	24,778	3,582	101	21,095	1,445	408	2,519	10,526
Snyder	2,104	45	-	2,059	125	-	358	784
Somerset	5,059	1,296	43	3,720	452	5	-	2,058
Sullivan	611	(D)	-	611	72	-	-	224
Susquehanna	2,221	33	88	2,100	156	-	20	363
Tioga	2,804	84	-	2,720	224	-	-	-
Union	1,631	47	1	1,583	171	-	180	135
Venango	7,272	239	53	6,980	105	-	-	-
Warren	5,365	121	10	5,234	229	-	-	-
Washington	19,541	3,470	192	15,879	583	-	-	92
Wayne	2,465	58	-	2,407	57	-	203	1,183
Westmoreland	40,847	1,633	57	39,157	1,261	-	-	1,057
Wyoming	1,152	13	-	1,139	131	-	15	514
York	44,482	491	34	43,957	4,589	1,702	3,223	5,346
Unclassified(2)	138	138	-	-	-	-	-	-

(D) Not shown due to possibility of data being identified with individual employers.

(1) Labor and Industry, Bureau of Employment Security, Statistical Information Bulletin No. 146.

(2) Includes nonclassifiable data and data not shown by county for reason stated in footnote (D).

(continued on following page)



TABLE 10: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1961  
(continued)

County	Lumber and wood products	Furniture and fixtures	Paper and allied products	Printing and publishing	Chemicals and allied products	Petroleum and related products	Rubber and plastics products	Leather and leather products
Total	12,155	22,749	39,680	65,691	50,187	14,990	21,329	34,128
Adams	212	309	247	128	35	17	605	2,269
Allegheny	359	1,334	2,156	7,332	3,872	387	476	52
Armstrong	90	30	-	81	485	17	-	-
Beaver	35	12	15	247	1,242	127	58	-
Bedford	314	-	-	41	14	-	-	166
Berks	253	698	1,390	954	974	113	97	2,340
Blair	65	36	2,159	722	124	4	-	1,585
Bradford	152	-	215	257	3	18	43	84
Bucks	269	904	2,401	510	3,669	3	691	77
Butler	47	100	-	164	561	839	387	-
Cambria	221	127	50	392	23	14	-	139
Cameron	4	-	-	5	8	-	-	-
Carbon	75	99	-	60	45	-	3	295
Centre	71	13	15	230	87	8	-	-
Chester	154	294	1,773	718	1,399	14	519	-
Clarion	190	150	87	39	-	5	138	-
Clearfield	313	16	219	150	7	8	-	119
Clinton	28	155	1,402	96	400	6	-	-
Columbia	157	12	70	125	11	20	-	-
Crawford	165	26	-	196	1,379	-	374	118
Cumberland	73	37	646	184	26	52	505	978
Dauphin	100	110	8	1,423	64	9	-	2,194
Delaware	293	337	2,690	2,945	2,990	5,045	168	86
Elk	143	-	1,078	60	174	-	-	140
Erie	328	1,165	2,113	905	133	143	2,487	87
Fayette	726	14	84	281	353	10	4	-
Forest	94	-	-	8	-	-	104	49
Franklin	133	124	53	150	-	3	95	205
Fulton	37	-	-	6	-	-	-	-
Greene	40	-	-	58	-	-	-	-
Huntingdon	138	-	265	161	-	7	-	311
Indiana	84	111	-	137	335	6	334	75
Jefferson	166	-	-	137	17	6	-	393
Juniata	63	181	-	4	-	-	-	-
Lackawanna	97	501	336	2,159	193	-	1,047	1,528
Lancaster	530	352	509	1,888	935	49	53	3,344
Lawrence	35	20	9	195	269	49	127	340
Lebanon	58	171	381	390	498	14	218	1,479
Lehigh	132	219	148	1,112	1,012	80	76	841
Luzerne	186	885	210	1,219	165	12	982	3,604
Lycoming	703	1,571	652	550	181	6	184	706
McKean	228	399	200	217	262	671	-	82
Mercer	117	2	38	250	49	9	7	-
Mifflin	121	61	-	68	2,140	7	-	90
Monroe	10	57	110	551	126	5	80	203
Montgomery	473	975	2,994	1,529	4,807	88	6,483	217
Montour	4	224	-	29	-	6	-	-
Northampton	50	290	1,831	1,627	591	6	104	165
Northumberland	284	891	265	324	963	-	4	1,060
Perry	83	-	-	22	-	-	-	-
Philadelphia	964	4,367	8,975	29,972	17,178	5,042	3,107	3,113
Pike	19	-	-	4	15	1	-	-
Potter	165	21	-	25	35	-	8	97
Schuylkill	55	199	252	340	1,376	61	-	717
Snyder	48	258	68	16	-	-	-	69
Somerset	296	36	-	107	23	-	19	86
Sullivan	166	-	-	2	-	-	-	147
Susquehanna	223	-	-	39	-	-	-	416
Tioga	102	4	-	46	22	-	-	921
Union	12	726	-	126	-	15	-	-
Venango	180	1	1	325	94	1,041	46	501
Warren	255	394	-	223	32	326	98	-
Washington	78	71	429	336	243	8	90	-
Wayne	140	203	-	24	5	-	-	221
Westmoreland	258	18	444	802	207	220	1,062	-
Wyoming	51	-	-	16	8	-	-	391
York	440	3,439	2,692	2,252	328	393	446	2,028

(continued on following page)

TABLE 10: NUMBER OF EMPLOYEES IN PENNSYLVANIA INDUSTRIES, BY COUNTY: 1961  
(continued)

County	Stone, clay, and glass products	Primary metal products	Fabricated metal products	Machinery, except electrical	Electrical machinery, equipment, and supplies	Transportation equipment	Instruments and related products	Miscellaneous manufactures
Total	60,406	208,214	108,582	110,274	129,718	60,995	24,118	30,209
Adams	385	252	92	99	150	-	-	13
Allegheny	6,194	57,773	17,713	10,064	26,744	6,574	2,083	2,576
Armstrong	3,609	17	136	37	10	-	-	-
Beaver	2,076	28,504	5,010	430	3,003	-	-	40
Bedford	7	-	32	161	-	-	-	-
Berks	788	5,733	2,288	5,384	5,040	2,735	399	947
Blair	435	99	590	649	1,253	30	315	86
Bradford	4	971	15	1,324	39	5	47	167
Bucks	1,243	6,894	1,720	1,560	1,758	1,622	2,739	133
Butler	1,141	3,953	279	720	358	862	227	103
Cambria	479	9,739	1,616	214	72	643	58	15
Cameron	-	146	6	31	1,435	-	-	-
Carbon	77	2,069	27	27	1,053	106	-	95
Centre	817	1,106	5	202	343	-	136	2
Chester	744	6,849	1,478	2,964	3,159	706	260	271
Clarion	1,494	-	62	9	196	116	99	3
Clearfield	1,137	-	239	187	774	-	463	10
Clinton	62	218	-	9	544	1,851	-	20
Columbia	63	73	74	251	122	1,849	307	13
Crawford	44	1,805	666	510	438	362	44	1,930
Cumberland	255	392	1,080	343	1,441	11	-	53
Dauphin	341	3,057	2,450	826	718	1,102	6	26
Delaware	274	2,177	1,606	10,604	1,034	9,865	172	886
Elk	116	727	48	168	4,511	-	-	-
Erie	211	3,738	4,672	3,775	4,240	4,558	2,154	1,788
Fayette	2,384	210	1,150	197	-	136	283	12
Forest	320	13	-	2	-	-	-	-
Franklin	512	-	148	3,855	2	299	9	3
Fulton	8	-	-	-	-	-	-	-
Greene	62	-	-	12	-	-	-	-
Huntingdon	892	22	46	-	8	-	-	13
Indiana	223	95	276	680	-	-	577	107
Jefferson	2,454	74	124	165	1,012	15	-	46
Juniata	43	-	1	-	-	-	-	10
Lackawanna	223	62	1,993	862	3,189	327	3	1,699
Lancaster	573	1,883	4,893	4,155	4,529	1,767	2,223	3,953
Lawrence	2,539	2,069	1,719	3,359	11	351	43	232
Lebanon	446	1,449	2,337	256	7	-	-	26
Lehigh	1,770	791	2,183	3,075	6,381	3,092	116	810
Luzerne	312	741	1,633	2,119	498	1,200	8	1,079
Lycoming	148	316	2,677	1,195	1,498	1,697	56	305
McKean	994	7	1,366	568	1,929	-	2	419
Mercer	144	8,361	1,064	1,933	5,646	388	35	355
Mifflin	100	1,465	81	550	163	-	-	5
Monroe	61	115	727	294	275	-	13	643
Montgomery	5,099	6,809	10,574	8,636	9,514	1,958	826	2,454
Montour	10	1	-	501	-	764	-	-
Northampton	3,505	14,025	1,952	1,081	934	6	-	1,248
Northumberland	296	525	273	83	-	491	2	334
Perry	11	-	29	11	-	-	-	25
Philadelphia	3,571	5,837	17,992	20,693	27,499	13,996	8,233	5,863
Pike	-	-	2	3	-	19	-	-
Potter	-	-	50	-	549	-	20	-
Schuylkill	358	1,605	694	215	16	187	3	119
Snyder	99	-	97	-	-	137	-	-
Somerset	147	46	241	63	45	24	72	-
Sullivan	-	-	-	-	-	-	-	-
Susquehanna	27	150	-	73	34	599	-	-
Tioga	499	275	381	154	-	81	-	11
Union	18	21	157	22	-	-	-	-
Venango	501	646	298	2,920	240	59	22	-
Warren	61	1,781	923	174	630	88	-	20
Washington	4,473	5,915	1,075	1,094	1,334	-	54	4
Wayne	27	-	212	-	102	-	-	30
Westmoreland	4,525	15,987	4,641	4,016	3,311	34	1,237	77
Wyoming	7	-	-	6	-	-	-	-
York	968	626	4,669	6,704	1,927	283	772	1,130





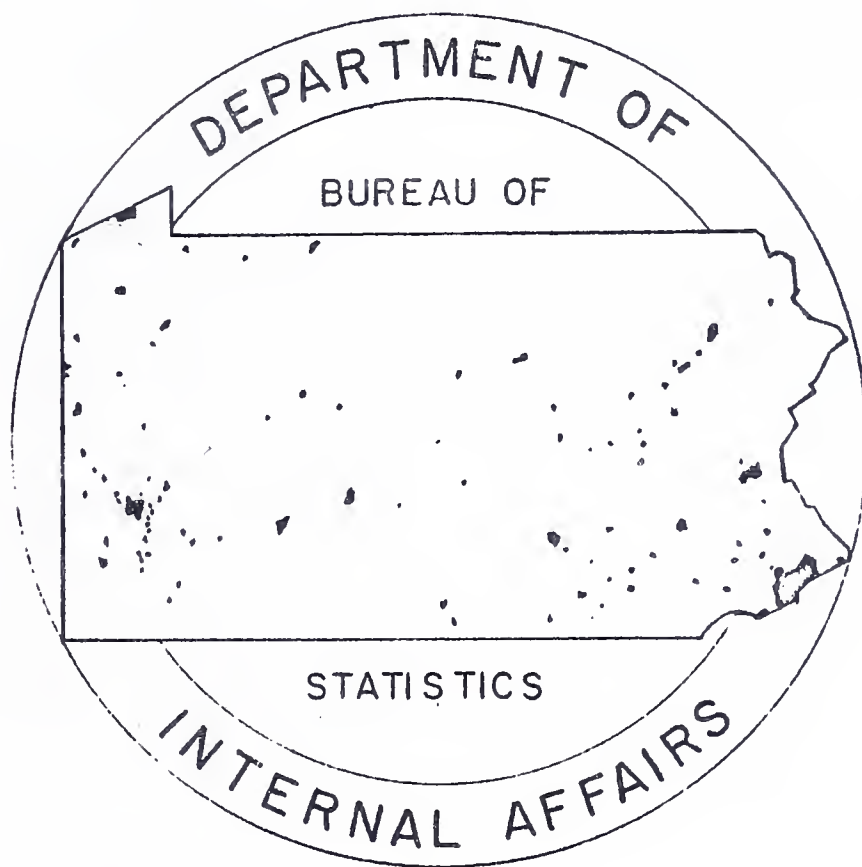


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# ECONOMIC BASE STUDIES FOR URBAN PLANNING AND DEVELOPMENT IN PENNSYLVANIA

By

Morris Hamburg  
University Of Pennsylvania



DEPARTMENT OF INTERNAL AFFAIRS  
GENEVIEVE BLATT, SECRETARY

APRIL 1962

## LIST OF PUBLICATIONS PREPARED BY THE BUREAU OF STATISTICS

NOTE: All charge publications should be purchased directly from the Division of Documents, Post Office Box 1763, Harrisburg, Pennsylvania. Pennsylvania residents please add five percent state sales tax to all orders. A check or money order payable to the Commonwealth of Pennsylvania should accompany each order. Free publications can be obtained directly from the Bureau of Statistics, Department of Internal Affairs, Harrisburg, Pennsylvania.

### A. CHARGE PUBLICATIONS

#### 1. 1964-65 PENNSYLVANIA STATISTICAL ABSTRACT

Statistics, explanatory notes, definitions, and information on statistical sources are presented in 30 subject sections: Population, Income, and Religion; Vital Statistics; Accidents; Education; Labor Force, Employment, and Earnings; Prices; Housing; Social Insurance, Financial Assistance, and Veterans' Benefits; Welfare Services and Resources; Hospitals, Medical Care, and Rehabilitation; Mental Health; Crime and Law Enforcement; Courts and Law; Correction and Parole; Elections, Legislation, and Legislators; State Government; Local Government; Climate; Natural Resources and Conservation; Parks and Recreation; Area and Industrial Development; Agriculture; Mineral Industries; Construction; Manufacturing; Transportation; Communications and Public Utilities; Business and Trade; Banking and Finances; Foreign Commerce.

There are 241 tables and 38 graphs and map diagrams, 353 pages. Price \$1.50 plus 8¢ state sales tax. (Copies for the years 1959-63 are still available at a price of \$1.50 plus 8¢ state sales tax and for 1958 at a price of \$1.00 plus 5¢ state sales tax.)

#### 2. THE 1965 INDUSTRIAL DIRECTORY OF THE COMMONWEALTH OF PENNSYLVANIA (17th Edition)

Published every three years with supplements for the two years between Directories. County Section - The names of all manufacturing establishments in each county are listed alphabetically within four-digit Standard Industrial Classifications (Revised SIC). The following information is shown for each establishment: plant location, office mailing address (if different than plant location), and number of employees. Industry Section - This section includes an alphabetical listing of all establishments within four-digit industrial classifications. The county location and the office mailing address is shown for each establishment. 511 pages. Price \$7.50 plus 38¢ state sales tax.

#### 3. PENNSYLVANIA MUNICIPAL AUTHORITIES DIRECTORY

Contains the names, addresses, dates of incorporation, and dates and amounts of bond issues for all municipal authorities in Pennsylvania. (1965 edition) Price \$1.00 plus 5¢ state sales tax.

#### 4. POPULATION AND AREA OF MUNICIPALITIES IN PENNSYLVANIA (S-9)

County map diagrams showing municipalities with area in square miles and 1950 and 1960 Census population figures. Ward population figures are given for Philadelphia, Pittsburgh, Erie, and Scranton. 70 pages. Price \$1.00 plus 5¢ state sales tax.

### B. FREE PUBLICATIONS

#### 5. MANUFACTURING STATISTICS

(Based on the annual Pennsylvania Industrial Census.)

M-1 1963 Statistics for Manufacturing Industries in Pennsylvania (also 1958, 1960, and 1962)  
M-2 1963 Statistics By Major Industry Group for Counties and Urban Places (also 1957 and 1962)  
M-3 Statistics for Urbanized Areas (discontinued after 1962)  
M-4 1963 General Statistics By Industry and By Size of Establishment (also 1957 to 1960, and 1962)  
M-5 (MC-63) 1963 County Industry Reports (Separate report for each county; includes data for political sub-divisions covering 1963 manufacturing statistics for individual industries.) - also 1961 and 1962.  
M-6 (FT-63) Exports By Pennsylvania Manufacturing Companies: 1963 (also 1961 and 1962)  
M-7 Directory of Pennsylvania Manufacturing Exporters: 1963  
This directory is an alphabetical listing of all Pennsylvania manufacturing establishments exporting in 1961, their addresses, and a listing of products exported by each -- also lists all exporting establishments under each manufactured product exported.

#### 6. PUBLIC UTILITY STATISTICS

(Based on the annual Census of Public Utilities in Pennsylvania)

U-1 Statistics for Electric Utilities in Pennsylvania, 1963 (also 1956 to 1960 and 1962)  
U-2 Statistics for Gas Utilities in Pennsylvania, 1963 (also 1956 to 1962)  
U-3 Statistics for Telephone Utilities in Pennsylvania, 1963 (also 1956 to 1962)  
U-4 Statistics for Water Utilities Including Water Authorities in Pennsylvania, 1963 (also 1956 to 1962)  
U-5 Statistics for Sewer Authorities in Pennsylvania, 1963 (also 1956 to 1962)  
U-6 Statistics for Motor Bus and Electric Transportation Companies in Pennsylvania, 1963 (also 1956, 1958 to 1960, and 1962)

#### 7. MUNICIPAL AUTHORITY STATISTICS

A-1 1957 Statistics for Municipal Authorities  
A-1 1958 Statistics for Municipal Authorities  
A-63 1963 Statistics for Municipal Authorities (also 1959 and 1962)

#### 8. INCOME STATISTICS

I-1 Pennsylvania's Personal Income by Type and County for Selected Years, 1929-1960

#### 9. SPECIAL RELEASES

S-2 Industrial Statistics for Pennsylvania, 1951 to 1955  
S-5 Mineral Statistics for Pennsylvania, 1957  
S-7 Mineral Statistics for Pennsylvania, 1958-1959  
S-8 Re-apportionment in Pennsylvania  
S-10 Employment by Broad Industry Groups and by County for Selected Years: 1919-1961  
S-11a Economic Base Studies for Urban Planning and Development in Pennsylvania (A description and evaluation of such studies in Pennsylvania--by Morris Hamburg, University of Pennsylvania)  
S-11b An Evaluation of Selected Data Requirements and Availability for Urban Economic Planning and Development in Pennsylvania--by Morris Hamburg and John H. Norton, University of Pennsylvania  
S-11c Selected Methods of Analysis for Urban Economic Planning and Development in Pennsylvania: Commentary on Regional Economic Accounting Systems, Benefit-Cost Analysis and Statistical Decision Theory--by Morris Hamburg and Thomas W. Langford, Jr., Wharton School of Finance and Commerce, University of Pennsylvania  
S-12(LFC) County Labor Force Report - These reports contain information on employable age population, labor force, unemployment, occupations, and industrial attachment for the cities, boroughs, and townships in fifty-one (51) counties. The data in these reports are not available from any other source. Not included are 16 counties for which similar information is available in the Census Tract publications of the U. S. Bureau of the Census.

S-13 Pennsylvania Scientific and Technical Personnel, 1962  
S-14 Comparable Statistics for Manufacturing Industries in Pennsylvania: 1916-1962

### C. OUT OF PRINT PUBLICATIONS

These out-of-print publications are listed because copies of many of these reports are available for reference in public, university, and college libraries.

Pennsylvania Productive Industries - These publications include information on manufacturing, public utilities, and mineral industries for the years 1916 to 1950.  
Index of Statistical Sources for Pennsylvania (Editions in 1955, 1957, 1959, 1960, and 1961)  
P-1 County and City Population Estimates for Pennsylvania  
P-2 County Population Estimates for Penna. by Age and Sex  
P-3 County Population Estimates -- Notes on Methodology  
P-4 Local Population Estimates in Pennsylvania  
S-1 Leading Manufacturing Counties in Pennsylvania  
S-3 Industrial Statistics for Pennsylvania, 1916 to 1956  
S-4 Capital Investment for Manufacturing and Mining Industries in Pennsylvania, 1956  
S-6 Manufacturing Employment in Urban, Suburban, and Rural Places in Pennsylvania, 1960  
56-5 Shifts in the Geographic Location of Pennsylvania Industry. 1920-1955

## PREFACE

Economic studies of the volume and pattern of an area's human and material resources, their utilization, and their income-generating potential are basic to metropolitan area planning, public policy determination, and private investment. The Committee for Economic Development, in a report, "Guiding Metropolitan Growth," published in August, 1960, after pointing out the need for such studies and outlining general standards for their conduct, stated, "A promising start has been made in this field but much remains to be learned about base analysis. Moreover, a better bridge must be built between scholars pioneering new techniques in the universities and practitioners engaged in applying economic base studies to policy problems in various metropolitan areas. The professional disciplines have not devoted as much attention to these problems as appears to be warranted. In addition, many techniques are severely limited by a lack of primary data." This is the first of three reports being written by Dr. Hamburg, having as their purpose the removal of these limitations as far as Pennsylvania is concerned.

It is appropriate that the Department of Internal Affairs should have sponsored this study. One of our continuing objectives is not only to improve the statistics collected and published by the Department, but to improve state statistics generally, as reflected in our compilation and publication of the Pennsylvania Statistical Abstract and other efforts. The Department has continuously encouraged local governments to approach cooperatively their planning and related problems. A basic objective of both the Bureau of Municipal Affairs and the Bureau of Statistics in the Department of Internal Affairs is to provide services to local governmental units. We believe that Dr. Hamburg's reports will assist us in improving these services.

We welcome the comments of readers of this report, particularly from scholars who may be pioneering new techniques in this field and practitioners who may be applying economic base studies to policy problems in various metropolitan areas. It is our belief that an exchange of information in this vitally important area of research will be helpful to all Pennsylvania communities which are attempting to plan for a better future for their citizens.

A handwritten signature in dark ink, reading "Genevieve Blatt". The signature is fluid and cursive, with a large initial "G" and a long, sweeping underline.

Genevieve Blatt  
Secretary of Internal Affairs



## FOREWORD

This is the first in a series of three studies being carried out under a contract with the Department of Internal Affairs, Commonwealth of Pennsylvania. The project represents a study of data requirements and methods of analysis for metropolitan planning and development in Pennsylvania. This monograph, which is a background study for the two ensuing reports, presents a description and evaluation of economic surveys, usually referred to as economic base studies, which have been carried out in Pennsylvania under the Urban Planning Assistance Program ("701 program") of the Federal Housing and Home Finance Agency. The emphasis upon these particular planning studies reflects the joint interests of the Bureau of Community Development, Department of Commerce which supervises the provision of Federal grants for local planning assistance in Pennsylvania and the Department of Internal Affairs. These economic surveys can be reviewed and analyzed from many points of view; the main focus in this monograph is on the types of data employed in such studies and the methods of analysis used.

The second study will be an evaluative report on data availability for economic studies used in connection with metropolitan planning and development with recommendations on possible improvements, changes and innovations in types of data which might be used for this purpose. The major emphasis will be on possible improvements in statistical programs supervised by agencies of the Commonwealth of Pennsylvania.

The third and final study will attempt to construct a method for analyzing factors in metropolitan development for the purpose of enabling planners to study the implications and outcomes of alternative planning policies. Recommendations will be made on desirable types of metropolitan economic analysis.

I would like to express my appreciation to the many persons and agencies that have rendered assistance to me in carrying out this first phase of the project. My thanks go, first of all, to the Department of Internal Affairs for its financial support of this undertaking and its understanding help in every aspect of this research. Kenneth Masters, who was Director of the Bureau of Statistics of that Department at the time this study was begun, rendered invaluable assistance and advice in getting it under way. Emmett Welch, the present Director, has also been extremely cooperative and has answered every request for assistance cheerfully, promptly and competently. I am indebted to the Bureau of Community Development of the Pennsylvania Department of Commerce and in particular, to Warren Zitzmann, Chief of the Planning Division, and William Shellabear (currently with the State Planning Board) of that Bureau for making available to me most of the economic surveys which are reviewed here and for other assistance in the early stages of this study. My warmest thanks also go to Frank Kelly, Neiland J. Douglas and Philip L. Tallon, Urban Planners in the Urban Renewal Administration, Region II, H.H.F.A. particularly for their aid and provocative discussion on the evaluation of economic surveys. Discussions with Charles Leven, a colleague at the University of Pennsylvania, have also been extremely helpful in this connection.

Finally, I acknowledge the faithful and high quality research assistance



rendered by Alberto Mortara, then a graduate student at the University of Pennsylvania, throughout the long hot days of a Philadelphia summer. I have not attempted to give credit here to the many other persons who have given willingly of their time, knowledge and advice on matters pertaining to subsequent studies in this series.

Morris Hamburg

## TABLES

1.	Types of Data Contained in 36 "Local 701" Studies .....	13
2.	Number of Information Units in 36 "Local 701" Studies by Source and Type of Data .....	15
3.	Age of Data in 36 "Local 701" Studies .....	17
4.	Time-Coverage of Data in 36 "Local 701" Studies .....	18
5.	Geographical Areas for Which Data Were Given in 36 "Local 701" Studies .....	20
	Appendix - List of "Local 701" Studies Reviewed .....	45

2

# ECONOMIC BASE STUDIES FOR URBAN PLANNING AND DEVELOPMENT IN PENNSYLVANIA

## SUMMARY

This paper presents a description and appraisal of economic base studies which have been produced recently in Pennsylvania under Urban Planning Assistance Project ("701") Grants from the Federal Housing and Home Finance Agency. The studies examined fall into two categories depending upon the size of the planning area, (1) "local 701" and (2) "regional 701". The "local 701" studies pertain to relatively small communities, typically cities, boroughs or townships of less than 50,000 population whereas the "regional 701" reports are primarily prepared for metropolitan or urban regions containing cities of 50,000 or more persons. The principal emphasis in this background monograph is upon data and methods of analysis utilized in these economic studies.

The major objective of the planning studies in general, of which the economic surveys were a part, seemed to be the direction and control of future community or regional development and the planning for extension and improvement of public services, utilities and facilities. A second objective which was present, particularly in the case of depressed industrial or mining areas, was the encouragement and stimulation of new and diversified economic activities. When the first objective seemed to be the major one, analysis usually centered upon measures of concentration and projections of population, studies of housing needs, demands for roads, water and sewage systems, school and recreation areas. In depressed communities, on the other hand, more detailed analysis of the economic base and greater recognition of interactions with the outside world were apt to be present.

An analysis was carried out on the characteristics of the data used in the "701" economic surveys. These studies most frequently presented information on population and labor force, somewhat less frequently on housing, industry and retail trade and even more infrequently on services, incomes and wholesale trade. The most recurrent source of data was the U. S. Census with Commonwealth of Pennsylvania sources next most commonly utilized. Census sources were usually quoted on population, housing, wholesale trade and services, while State sources predominated in industrial statistics, particularly for value of production, value added by manufacture and capital expenditures. Both sources were used for numbers of industrial establishments, payrolls and wages. County and local sources were relatively infrequently used and primary data collections were quite uncommon. The types of analysis that could be carried out were particularly limited by the availability of small area data. There were problems of insufficient geographical detail, timeliness, relevance, inadequate time coverage, and so forth in readily available secondary data. The second paper in this series of studies will address itself specifically to some of these problems.

In appraising these economic studies, it must be recognized at the outset that the Federal Government has not provided state, regional and municipal planning agencies with specific, detailed and definitive statements of program objectives nor with precise standards for the carrying out of



these and other reports produced under the "701" program. Furthermore, some of the communities clearly undertook participation in the program to solve specific vexing local problems. Finally in many cases, little resources were allocated for the economic survey portions of the Comprehensive or Master Plan. It is perhaps, not surprising, therefore, that thorough-going, sophisticated analyses were quite the exception in the studies examined.

The major deficiency of the "701" economic studies in Pennsylvania is their descriptive nature and lack of analytical content. Generally, there seemed to be a direct relationship between size of area studied and the depth and completeness of the surveys. Where formal analysis was used, the primary technique employed was the separation of "basic" and "service" economic activities. In the "local 701" studies this was often in the form of verbal comment and recommendations for future study rather than explicit analytical work.

The main effort in the "701" reports appeared to go into a gathering of "available facts of economic significance." The impression gained was one of an unsystematic collection of incomplete and not clearly interrelated facts. Partially, this reflects the non-existence of a well worked out system of basic economic information at local and regional levels. Further limitations of the "701" economic studies were the general absence of careful statistical or economic analysis of past trends, the lack of explicit statements of relationships between relevant demographic and economic factors or serious analysis of dynamic factors making for change in underlying structural relationships. Seldom were there well worked out employment projections with interrelated future land development site proposals, nor were projections of measures of size or growth or decline of the local economy ordinarily carried out. Projections that were made tended to be based on unstated and unformalized presuppositions. There was a general lack of examination of industrial diversification, cyclical sensitivities and economic stability.

There appears to be a need for the adoption of logical frameworks of analysis in the "701" economic base studies. More formal methods of analysis should aid in the understanding of the interrelationships of the various elements of an area's economy and of relationships with the outside world. The absence of structures explaining existing economic relationships implies that not only is there no real foundation for prediction, but that guidance is lacking for reaction to shifts in existing relationships. Furthermore, formal structures for thinking about a community or region's economy provide direction for decisions concerning what data to collect and what their relevance is. Serious consideration should be given to the application in the "701" studies of some of the more modern alternative methods which have been proposed for urban economic analysis.

More careful and detailed specifications of community and regional long range goals appeared to be needed in the "701" economic studies. Data and analysis should be more directly oriented toward enabling decision makers to study and assess various alternatives for achieving these objectives. Although most of the studies referred to planning as a continuous process, they were not clear on how data gathering and analysis were to be used in connection with reviews and revisions of plans and how they would be utilized as bases of decisions on such matters as nature and extent of land use, circulation and community development.

While doubtless much of the information assembled in the "701" economic base studies is potentially useful, there appears to be considerable room for improvement, both from the standpoint of the furnishing of more specific and more carefully formulated guidelines by sponsoring governmental agencies and the carrying out of studies with greater depth and utility by the consultants or planning groups.

# ECONOMIC BASE STUDIES FOR URBAN PLANNING AND DEVELOPMENT IN PENNSYLVANIA

## INTRODUCTION

In recent years, the United States has undergone an "urban revolution". Great shifts in population and industrial location have taken place and important changes have occurred in land use and living patterns in the United States. Over two-thirds of our total population is now concentrated in urban areas. Major problems present themselves in such fields as urban renewal, resource and industrial development, water and air pollution, sewage disposal, open land scarcity, transportation, public facilities and the organization of governmental machinery to handle problems of metropolitan-wide dimensions. There is a vast need for appropriate planning pointed toward the goal of better decision-making in our metropolitan and urban areas. Careful detailed studies of the economic bases of these areas can represent important steps toward the solution of their problems.

The purpose of this study is to present a description and evaluation of "economic base studies" which have recently been carried out in Pennsylvania under urban planning grants from the Federal Housing and Home Finance Agency. This program is usually referred to as the "701 program" because of its origin as Section 701 of the Federal Housing Act of 1954. Limitations of time and resources have necessitated the restriction of this report to these "701 studies" although ideally it would have been desirable to have encompassed a wider spectrum of economic studies, regardless of sponsorship considerations, including particularly the more sophisticated investigations for larger cities and sprawling metropolitan regions. However, because of the above mentioned limitations, this report is restricted to a consideration of the so called "local 701" and "regional 701" studies.

"Local 701", as the term is used here, refers to studies carried out in the preparation of "Comprehensive Plans" or "Master Plans" by communities falling in the following categories:

1. Counties, cities, boroughs and townships of less than 50,000 population.
2. Groups of adjacent governmental units, which undertake joint planning programs, with a total population of less than 50,000.
3. Urban areas of unified regional planning having no city or continuous urban concentration with a population of 50,000 or more.

"Regional 701" similarly refers to studies for communities as follows:

1. Counties, cities, boroughs and townships of any sized population, which have suffered substantial damage as a result of a catastrophe.
2. Areas where rapid urbanization has resulted or



is expected to result from the establishment or expansion of a Federal installation.

3. Metropolitan or urban regions containing a city or a continuous urban concentration of 50,000 or more.

If U. S. Census terminology is used, areas covered in "local 701" studies include urban fringe communities, non-urbanized communities within urbanized counties and non-urbanized counties. All studies for these communities which had been submitted to the Pennsylvania Department of Commerce<sup>1</sup> as of May, 1961, and which contained a survey of the economy, have been examined in the preparation of this report. There were 36 such studies.<sup>2</sup> Eleven others were excluded because they contained no economic survey. In some cases, groups of municipalities were examined in the same report. Some of these studies represented a "final product" in the form of a Comprehensive or Master Plan, whereas others consisted of reports or surveys which were part of the early research conducted in the preparation of the Plan. There were 67 other "local 701" studies underway in Pennsylvania as of the cut-off date of May, 1961. Most of the "local 701" and "regional 701" studies included in this report were prepared by private consulting firms. The remainder were prepared by local, county or regional planning commissions, the Government Consulting Service of the Fels Institute of Local and State Government and the Pittsburgh Regional Planning Association.

In order to focus upon the orientation of the "local 701" studies, so as to view them, first of all, in terms of their numerous aims rather than from the viewpoint of any one type of analysis, the purposes of the "701 program" and the definition of "comprehensive planning" used in this program (as summarized by the Bureau of Community Development, Pennsylvania Department of Commerce) are given below:

#### Purposes of the "701 Program"

1. To assist state and local governments in solving planning problems resulting from concentration of population in metropolitan and other urban areas, including smaller communities.
2. To facilitate comprehensive planning for urban development by state and local governments on a continuing basis.
3. To encourage state and local governments to

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<sup>1</sup>The "local 701" studies are administered by the Bureau of Community Development, Department of Commerce, which is the official state agency in Pennsylvania authorized to provide local planning assistance.

<sup>2</sup>A list of the "local 701" studies and the communities covered by these studies is given in the Appendix.



establish and develop planning staffs.

Definition of "Comprehensive Planning"

Comprehensive planning includes the following eligible activities, to the extent that they are directly related to urban needs:

1. Preparation as a guide for long run development, of general physical plans with respect to the pattern and intensity of land use and the provision of public facilities, together with long range fiscal plans for such development.
2. Programming of capital improvements based on a determination of relative urgency, together with definitive financing plans for the improvements to be constructed in the earlier years of the program.
3. Coordination of all related plans of the departments or subdivisions of the government concerned.
4. Intergovernmental coordination of all related planning activities among the state and local governmental agencies concerned.
5. Preparation of regulatory and administrative measures in support of the foregoing. This part of comprehensive planning includes zoning ordinances and subdivision regulations.

While the emphasis of this report is upon studies of the economy included in planning reports, it is clear from the above statement that analysis of the economic base of communities represents but one of many facets of such studies. It is only fair to recognize this point at the outset, as a caveat against unduly harsh judgments on the basis of too narrow a viewpoint.

## 1. Economic Base Studies and Economic Surveys

It was indicated earlier that a main concern of this report is a review of the economic surveys contained in planning studies carried out under the "701 program" in Pennsylvania. These surveys are frequently referred to and entitled as "economic base studies." But what is an "economic base study?" Since this is a term which is subject to varied usages and meaning, it is advisable to specify some of these and to indicate the sense in which the term will be used in this report.<sup>3</sup>

In the analysis of urban economies, considerable use has been made of a division of a community or city's economic activity into the dichotomy of "basic" and "service". Terms such as "primary", "city-building" and "export" are often used as synonyms for "basic" while terms such as "secondary", "city-serving" or "non-export" for "service". The "basic" portion of the economy consists of those activities devoted to the export of goods and service beyond the borders of the locality under investigation. This activity is thought of as being the primary reason for the earning ability and economic growth of the community. Because of the existence of "basic" industries which sell their products and services to the outside world, "service" industries can be supported within the community's boundaries. These service industries have as their main function the provision of goods and services for persons living within the community. The service industries are thought of in a dependent sense, existing only to serve basic workers and other service workers. Often the division in an "economic base study" is presented in terms of employment, with the separation being made between basic (export) and non-basic (non-export) employment. Stated in these terms, non-basic employment is thought of as fluctuating in response to changes in basic employment.

In the language of modern Keynesian economics, the "economic base" theory attempts to distinguish between exogenous and endogenous activities of the community. Basic employment is conceived of as being exogenously determined, that is, originating from demand external to the local area whereas non-basic employment is endogenously determined, that is, stemming from demand within the local area. Changes in non-basic activity are conceived of as resulting from changes in basic activity through a multiplier relationship analogous to investment multipliers and foreign trade multipliers in economic theory.

The concept of the "economic base" as used above is clearly quite technical and specialized, and a considerable literature has developed concerning such matters as problems of classification, measurement and appropriate statistical units to employ in effecting the separation between "basic" and "service" activities. However, the term "economic base" has also been used with different and sometimes broader connotations. It sometimes has simply referred to activities thought of as being major, fundamental, or of considerable importance in the economic structure of an urban area. Other uses of the term include the notion of the tax base of a given

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<sup>3</sup>The material on terminology leans heavily on the work of R. B. Andrews. See Richard B. Andrews, "Mechanics of the Urban Economic Base: The Problem of Terminology," Land Economics, August, 1953, pp. 263-268.

area, upon which the total of fiscal revenue depends. The following definitions were given, for example, by a speaker at a conference on urban problems:

"The two senses in which we think of the economic base of the community are these: First, the tax or income base on which the tax revenue for any community is predicated, on which it relies for the funds to provide the public services and the other facilities that the community needs. Second, its broader application to the fundamental sources of income that may be available to the citizens in any particular community, from which they derive their livelihood and on which the community's activity as a whole depends. I am thinking particularly of such industries as mining, agriculture, fishing, construction, manufacturing, and wholesale and retail trade."<sup>4</sup>

Some "economic base studies" have attempted a careful delineation of "basic" ("export") activities, either in terms of employment or industries and have then concentrated major attention on these activities alone. Others have attempted detailed studies of both "basic" and "service" elements of the urban economic structure. Finally, some "economic base studies" are not addressed exclusively to the problem of the "basic" - "service" classification, but instead are broad surveys which attempt to marshal all facts of significance to the economy being studied. Such investigations might include inventories of economic resources, population studies and projections of trends and forecasts. Andrews says with regard to this type of broad interpretation,

"This leads the present writer to the conclusion that in the minds of some planners and economists the term "economic base" refers to the entire economy of the community which serves as a base for the continued functioning and existence of that community."

It would appear reasonable, in view of the sometimes rather specialized connotation of "economic base" and the numerous interpretations attached to the term that it should at least not be used for the broader type of study which attempts a description of the entire economy. "Economic survey" is a much less confusing term for the latter type of study. Since relatively few of the studies reviewed in this report are "economic base studies" in the strict "basic" - "service" classification sense and since most attempt some description of the entire economy without adhering to rigid classification schemes, it seems most appropriate to refer to them as "economic surveys." That term will usually be used, therefore, in referring to the portions of the planning studies mentioned in this monograph which relate to a community or region's economy and the term "economic base study" will tend to be reserved for the more specialized type of investigation which concentrates on the aforementioned dichotomous classification. "Economic base study" has been used in the title of this paper, however, because of widespread association of this

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<sup>4</sup>Larry Smith, The Economic Base of the Community, Business Action for Better Cities, Chamber of Commerce of the United States, Washington, D. C. 1952, p. 54.



term with all types of surveys herein described.

### Economic Surveys in the "701 Program"

The economic survey portion of planning studies carried out under the "701 program" were but one aspect of such studies. In order to be specific about how economic surveys are treated as one part of the broad framework of the preparation of a comprehensive plan, the following illustration is given from a "local 701" study prepared for the city of Meadville by Morris Knowles, Inc.<sup>5</sup> The first report in a series which constitute the Comprehensive General Plan of Meadville included the following subjects: land use, population, structures and environment, economic base, transportation, schools, recreation, public buildings and institutions, utilities, municipal financing, school district financing, local government organization and community appearance. Thus, the "economic base" represented one of thirteen different subjects examined. The section on the "economic base" according to the preceding discussion could more appropriately be termed "economic survey" since no strict "basic" - "service" or "export" - "import" classification is attempted.

Again, for purposes of being specific in indicating the general nature of the economic surveys carried out in these studies, a listing of the subject headings included in the Meadville report follows:

- A. Community Goals
- B. Importance of Economic Base
- C. Economic History and Natural Features
  - 1. Historical data
  - 2. Geographic setting
  - 3. Climatic features
  - 4. Mineral resources
  - 5. Soils
  - 6. Water resources
  - 7. Natural vegetation
  - 8. Topographic features
- D. Labor and Employment
  - 1. Past and existing labor force size
  - 2. Future labor force size
  - 3. Past and existing labor force composition
  - 4. Future city labor force composition
  - 5. Past and existing employment
  - 6. Future employment
  - 7. Past and existing occupation patterns
  - 8. Future occupation patterns
  - 9. Existing labor market area
  - 10. Past and existing wage characteristics
  - 11. Future wage characteristics

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<sup>5</sup> City of Meadville, Pennsylvania, Research and Surveys for the Comprehensive General Plan, Report No. 1, 1958, prepared by Morris Knowles, Inc.



E. Trades and Services Base

1. Importance of trades and services
2. Characteristics of retail trade centers
3. Past and existing retail trade
4. Future retail trade
5. Past and existing wholesale trade
6. Future wholesale trade
7. Past and existing service trade
8. Future service trade
9. Past and existing effective buying income
10. Future effective buying income
11. Past, existing and future bank debits and postal receipts
12. Past and existing central business district
13. Future central business district

F. Educational Base

1. Importance of education
2. Characteristics of educational centers
3. Allegheny College
4. Future education

G. Agricultural Base

1. Importance of agriculture
2. Past and existing agriculture base
3. Future agriculture base

H. Tourist Trade

1. Importance of tourists
2. Existing tourist trade
3. Future tourist trade

I. Industrial Base

1. Importance of industry
2. Existing industry, their products and markets
3. Past and existing manufacturing employment
4. Future manufacturing employment
5. Past and existing industrial statistics comparison
6. Future industrial statistics comparison
7. Past and existing industry size
8. Future industry size
9. Past and existing industrial diversification
10. Future industry diversification
11. Past and existing industry stability
12. Future industry stability
13. Past growth industries
14. Future growth industries
15. Existing manufacturing floor area and land area ratios
16. Future manufacturing floor space and land area

## J. Summary of Findings

## K. Summary of Needs

Although there are often only a few sentences under each heading, and sometimes only one, the above list represents a much wider coverage of topics than is to be found in most of the "701" economic surveys. However, most of the subject matter covered in "701" economic surveys can be found in the above list.

In many of the planning studies, however, population and migration, housing and household characteristics are included in the economic survey, although the section may be referred to as "economic background," "the economy," "economic and population analysis" or by some similar designation. In some cases only a very few pages are devoted to an economic survey. There certainly appears to be no unanimity on what constitutes the economic survey section of the planning report nor on what its importance is in the comprehensive plan.

## 2. "Local 701" Planning Studies

Purposes of planning depend upon the specific nature of community problems and vary with the size and type of area covered. A few specific purposes of planning by communities which carried out "local 701" studies were clearly recognizable. For most of these small communities and particularly those located in the urban fringes of larger cities, the main objective appeared to be the direction and control of an assumed future development and the planning for extension and improvement of public services, utilities and facilities. With this type of purpose, the planning study usually centered upon measures of concentration and projections of population, studies of housing needs, demands for roads, water and sewage systems, schools and recreational areas.

In other cases, there was no assumption of future development. This was particularly true of communities in "depressed" industrial or mining areas. Here, the most frequently sought goal was the encouragement and stimulation of development of new and diversified economic activities. In these cases, an analysis of the economic base of the community and a recognition of the interaction with the surrounding region becomes more important than in the aforementioned type of situation and is apt to be carried out in more detail.

In a small number of studies, considerable attention was paid to the present functioning and future prospects of a retail business district, and more attention was given to delimiting trade areas and discussing problems such as traffic and parking.

In most cases, regardless of the major focus of the study, reference was made to problems occasioned by the existence of dilapidated or sub-standard residential or business districts and irrational land use patterns.

Somewhat more than one half of the "local 701" studies examined were reports based on various types of research carried out as a preliminary to the drawing up of a Comprehensive or Master Plan. A majority of the remainder of the studies were included in Comprehensive or Master Plans along with recommendations and research findings. Occasionally plans and recommendations were given without indicating particularly the factual basis upon which the conclusions were drawn.

Most of the studies dealt with a range of recognizable problems facing the community or area under study, while others treated a single topic exclusively or predominantly (e.g., population or the economy).

### Types of Data

Since a major emphasis of the study of which this report is a part is upon data availability and data requirements for metropolitan planning and development, an examination was undertaken of the characteristics of the data included in the "local 701" studies. Of course, a statistic such as the number of studies that included data on (say) income is of relatively little interest or significance by itself. However, it was felt that summary tabulations such as those presented in Tables 1-5 would provide a framework for

TABLE 1. TYPES OF DATA CONTAINED IN 36 "LOCAL 701" STUDIES <sup>1</sup>

<u>Type of Data</u>	<u>Number of Studies</u>		<u>Total</u>
	<u>That Had Some Data</u>	<u>That Had No Data</u>	
Population	33	3	36
Housing	27	9	36
Incomes	18	18	36
Labor Force, Employment, Unemployment	32	4	36
Agriculture	7	29	36
Industry	25	11	36
Wholesale Trade	15	21	36
Retail Trade	27	9	36
Services	19	17	36

<sup>1</sup>Of 47 "local 701" studies examined, 11 were excluded from the tabulations because they were not directly relevant to the purposes of the study.



generalizing concerning data utilization and would provide insight regarding the nature of economic analysis which was being used. In particular, this information sheds some light on the question of how data published by State agencies are utilized in these planning studies.

Forty-seven "local 701" studies were examined of which 11 were excluded from the tabulations because of the following criteria of pertinence. It was decided to record and analyze only information on population, housing, labor force, incomes, agriculture, industry, wholesale and retail trade, and services and not to record, therefore, information on a number of other areas among which were traffic and transportation, land use, public utilities, public works and local finances. Certain communities analyzed or surveyed specific critical problems in one or more of these latter areas. It was decided to exclude from the tabulations all studies that did not contain a survey of the economy of the community or that did not contain information for such a review, even of the most rudimentary type.

Almost all of the 36 "local 701" studies for which information was recorded contained data on population and labor force (Table 1). Data on housing, industry and retail trade appeared less frequently, but were still present in more than two-thirds of the studies. About half of the studies carried information on services and incomes, somewhat less than a half on wholesale trade, while a few presented data on agriculture. It may be noted that about two-thirds of the studies presented data on land use, although this figure is doubtless an underestimate because separate studies of land use may have appeared or perhaps will appear in separate documents from those carrying the economic survey.

### Sources of Data

The source of information most frequently used by the planning studies was the U. S. Bureau of the Census followed by the Commonwealth of Pennsylvania and county or local sources (Table 2). Census data were especially prevalent on population (total population and age-sex composition), housing, wholesale trade and services, this information most frequently being derived from the 1950 Census of Population and the Censuses of Business of 1948 and 1954.

The Commonwealth of Pennsylvania was the most frequent source of information on industry, being practically the only source for information on value of production, value added by manufacture and capital expenditures. Both Census and State data, however, were utilized on numbers of industrial establishments, employment, payrolls and wages. State figures were also often quoted in the areas of population (birth and death rates) and labor force (employment and unemployment).

County or local level sources were used almost exclusively for school enrollment information and were also used for industrial and labor force information, although much less frequently than either Census or State sources.

Primary data gathering by the authors of the planning studies was used in only a small number of cases, with the exception of the previously mentioned land use surveys. The most usual type of primary information was a list of industrial establishments for a small area or community where no separate

TABLE 2. NUMBER OF INFORMATION UNITS IN 36 "LOCAL 701" STUDIES BY SOURCE AND TYPE OF DATA

Type of Information	Number of Information Units <sup>1</sup> By Sources							Total
	Census	State	County or Local	Primary Data	Original <sup>2</sup> Estimate	Other	Unknown	
1. Population	95	12	26	1	2	2	1	139
2. Housing	81	2	5	5	1	1	3	98
3. Income	12	-	1	-	3	16	1	33
4. Labor Force, Employment, Unemployment	80	12	8	10	6	-	10	126
5. Agriculture	15	3	4	-	-	1	3	26
6. Industry	21	52	20	15	-	4	10	122
7. Wholesale Trade	51	-	3	-	2	6	-	62
8. Retail Trade	97	-	5	3	2	16	-	123
9. Services	64	-	3	-	-	8	1	76

<sup>1</sup> An information unit in this and subsequent tables is defined as a group of data, from a common source, conveying the same information for the same area, for one or more points in time.

<sup>2</sup> An original estimate is an estimate made by authors of the planning studies from secondary data.

information was given by the usual sources of secondary data. In a few other cases, primary data were collected (e. g. through a population survey) to bring up-to date information available from secondary sources, such as the Census. Primary data on housing, including the number, age, conditions, type of dwelling units were sometimes obtained from the land use surveys. Primary information, finally, was collected in a few instances on phenomena for which secondary data are not customarily available. Illustrative of this category are the studies of the "place of work" of residents of a community, which accounted for most of the primary data on the subject of labor force.

Sales Management was the most important other source of data. It was frequently used for information on incomes and retail trade.

The conclusions on sources of data as well as those to be given on age, time and geographical coverage of data were based on figures shown in Tables 2 through 5. It was felt that the specific numbers given in these tables or percentage breakdowns of these numbers would not be very meaningful, so no pretense of precise quantification was made in the statement of conclusions. A brief technical note concerning the tabulations, however, seems in order. A statistical unit was employed in making the counts of sources and other items which seemed particularly appropriate for this task. This was the "information unit," which was defined as a group of data from a common source, conveying the same information for the same area for one or more points in time. For example, a time series on employment in a particular area was classified as a single information unit, an age distribution of the population in a given community was a single information unit, and so forth.

#### Age and Time-coverage of Data

In measuring and interpreting a local economy, it would be desirable, of course, to employ relatively recent information and in addition to analyze data over a long enough sweep of time to gain some appreciation of dynamic factors at work. The "local 701" studies were examined, therefore, from the standpoint of the age and time-coverage of their data. "Information units" were classified according to the age of the latest data shown.

In almost all cases, the data given were less than ten years old (Table 3). Taking all types of information together, the number of cases in which the latest data shown were between five and ten years old at the time of publication of the study was approximately equal to the number of cases in which the information was five years old or less.

Older data were most common for housing and the labor force, while recent data occurred most often in information about industry. This is partially explained by the fact that U. S. Census data generally tend to be less up to date than data from other sources. Since most of the studies examined were prepared in 1959 or 1960, the Census data quoted (from either the 1950 Census of Population or 1954 Census of Business) were typically more than five years old.

Considering the studies from the viewpoint of time-coverage, the data most frequently shown were for a single year or, more generally, for only one point in time (Table 4). Population data (especially total population) were the only type of figures usually given in the form of long time series. Extended



TABLE 3. AGE OF DATA IN 36 "LOCAL 701" STUDIES

<u>Number of Information Units by Age of Latest Data Shown</u>				
<u>Type of Information</u>	<u>5 Years or Less</u>	<u>6 to 10 Years</u>	<u>More than 10 Years</u>	<u>Total<sup>1</sup></u>
1. Population	62	72	-	134
2. Housing	18	66	-	84
3. Income	22	8	3	33
4. Labor Force, Employment, Unemployment	37	82	2	121
5. Agriculture	12	9	-	21
6. Industry	99	15	4	118
7. Wholesale Trade	27	32	-	59
8. Retail Trade	65	51	-	116
9. Services	36	38	-	74

<sup>1</sup>The total number of information units for each type of information does not agree with the total in either Table 2 or Table 4. The reason for this is that in several cases a group of data can be classified as a unit from the viewpoint of, say, time-coverage, but has to be split into more than one unit from the viewpoint of, say, sources.



TABLE 4. TIME - COVERAGE OF DATA IN 36 "LOCAL 701" STUDIES

Number of Information Units Where Information was Given For

Type of Information	One Year Only	Two Years	3 or More Years Covering A Period of		Total
			10 Years or Less	More Than 10 Years	
1. Population	32	25	18	59	134
2. Housing	61	11	6	13	91
3. Income	23	7	3	-	33
4. Labor Force, Employment, Unemployment	76	39	6	-	121
5. Agriculture	6	7	-	8	21
6. Industry	61	26	5	26	118
7. Wholesale Trade	16	33	3	7	59
8. Retail Trade	42	48	11	15	116
9. Service	16	48	3	7	74

time series were also occasionally given in the areas of housing, agriculture and industry. On the other hand, data on income and labor force were usually shown for only one or two points of time.

### Geographical Coverage

In the "local 701" studies, information was often shown only for the specific local area under study such as a city, borough, township, etc; frequently, however, it was shown for some larger area as well (Table 5). In a number of cases, certain types of information were not available for the specific area or community under investigation, although they were available for other areas or communities. The following two situations were typical in these cases: (1) the area under study was smaller than the finest subdivision for which secondary data was readily available, (in this case the information was usually available only for an area wider than the one under study); (2) the boundaries of the area under study did not coincide with those of the area for which information was available (in this case data may have been available for only a part of the area under study).

Both of the above cases present the problem of insufficient geographical detail in secondary data. Most commonly, this deficiency appeared when the area under investigation was a borough or township and certain data were available only for the entire county. This was most often the case for data on agriculture, labor force and industry.

### Analysis and Projections

Appropriate planning for community development requires knowledge of many future characteristics of the area and its population. The "local 701" studies were examined to determine the types of forecasts and projections they contained with attention being centered on the analytical methods used. Most of the studies utilized projections and forecasts to some extent. Population was the most frequently forecasted characteristic, typically being projected from 15 to 20 years into the future. Projections were also frequently given for school enrollment, housing development, the size of labor force, employment and unemployment.

Techniques of population projection may, in general, be classified as direct or indirect.<sup>6</sup> Direct methods of projection are based on past and present population figures. Indirect forecasts involve the derivation of population figures from projections of political, social and economic factors. Although in many cases it was difficult to determine how the population forecasts were derived, it is probably appropriate to classify most of them as "direct." Since this implies that with the aid of additional information and assumptions other forecasts were usually derived from population projections, these latter estimates played an especially important role.

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<sup>6</sup>See W. Isard, Methods of Regional Science, John Wiley and Sons, N.Y., 1960, pp. 5-6; for detailed description of methods of population projection and migration estimation, see pp. 5-79.

TABLE 5. GEOGRAPHICAL AREAS FOR WHICH DATA WERE GIVEN IN 36 "LOCAL 701" STUDIES

Type of Information	Number of Information Units, By Geographical Definition			
	Information Given For The Specific Area Under Study (City, Borough, Township, etc)		Information Given Only For Areas Different From the Specific Area Under Study	
	Only	As Well As For Other Areas		Total
1. Population	78	60	4	142
2. Housing	70	26	1	97
3. Income	11	19	2	32
4. Labor Force, Employment, Unemployment	47	54	19	120
5. Agriculture	1	4	14	19
6. Industry	50	35	31	116
7. Wholesale Trade	13	42	-	55
8. Retail Trade	26	79	7	112
9. Services	10	59	4	73

The methods used in the "local 701" studies in forecasting population figures varied from simple assumptions of "continuation of present trends" to analytical methods based on existing sex-age composition of the population, present and assumed future fertility and survival rates for each age-group, and forecasts of migration. These latter more sophisticated techniques were only infrequently employed. The most common procedure simply involved an application of present and assumed gross birth and death rates to total population data.

In many population forecasts, a range of possible figures was given, usually a "high" and "low" estimate. These estimates were, of course, based on somewhat different assumptions concerning future rates of growth. The typical underlying assumption for the "high" estimate was that the plan (and therefore various recommended improvements) would be carried out expeditiously.

In some of the studies, usually, for smaller communities, the amount of land available for residential construction was explicitly recognized as a constraint on the amount of potential population and economic expansion. In these studies, an "ultimate population" was typically forecast based on the area of land available for new construction, assumed or recommended population densities and assumed or recommended rates of demolition of existing dwelling units. Often no attempt was made to estimate the time of realization of these ultimate populations. However, the projected ultimate population figures were very important since related forecasts and often a substantial portion of the economic aspects of the plan were based on them.

Studies of population shifts are extremely important in connection with estimating total population figures. This is particularly true for subnational areas, where in-migration and out-migration are relatively unrestricted and are not particularly determined by national policies. However, description and analysis of population movements are important in the study of small areas, even abstracting from the problem of estimating total population levels. Continuing increases in total population cannot be assumed for small areas as they reasonably may be for the nation as a whole over fairly substantial periods of time. These shifts of families among communities are closely related to economic growth and economic welfare factors. A clear understanding of these movements can be extremely helpful in the solution of community problems.

In the "local 701" studies, migration estimates appeared to be particularly significant in estimating future total population levels for two different types of areas: (1) residential communities in the urban fringes of large cities and (2) communities in economically depressed areas. In the urban fringe communities, future population levels will mainly be determined by the rate of in-migration of new families, while in economically depressed areas future population levels (and composition) will be primarily dependent upon the reversal or continuation of present rates of out-migration.

Direct data on migration are difficult to obtain. For this reason past net migration rates, when estimated at all, were usually arrived at by a crude form of what demographers refer to as the "residual technique." This involves simply the subtraction of the theoretical "natural change" (difference between births and deaths) in the population for the given area from the corresponding



observed change in the population.<sup>7</sup> It has been pointed out in demographic studies that where the natural change of the total population is subtracted from the change in total population, net migration during the period studied tends to be underestimated. This is because natural change figures are obtained for the total population rather than for the original population (excluding migrants) since the latter data are generally unavailable. It would appear to be a reasonable presumption that this tendency toward underestimation is present in the "local 701" migration estimates. This error tends to increase with the amount of migration, and the migration estimates tended to be made most often in the "local 701" communities where migration was deemed to be significant.

In addition to estimates of past migration, forecasts of migration were sometimes made. These were typically based on simple trend projections or in the case of expanding suburban areas on the experience of "comparable communities." In the case of shrinking communities in depressed areas, assumptions were usually made concerning the date and extent of economic recovery.

Other types of forecasts in the "local 701" studies included estimates of future levels of employment and labor force, demand for housing and school enrollment. Projections of employment and labor force were most often made where there was a clear recognition of problems in these areas. Typically, therefore, such projections appeared for communities in the coal mining region, where unemployment and out-migration were serious current difficulties. Assumptions were usually made concerning the decline in employment in the coal mining industry and the development of new types of manufacturing industries in the region. These assumptions were not ordinarily spelled out explicitly nor were they incorporated into any formal model of the local or regional economy. The forecasts appeared to be primarily based upon subjective judgments on the part of the investigators.

More objectively grounded estimates of employment appeared in the study of the Steel Valley (communities of Homestead, West Homestead, Munhall, West Mifflin and Whitaker). Here, future industrial employment was projected based upon the area available for new industrial construction and plant expansion and assumed densities of workers per acre of industrial area. Service and retail employment were forecast on the basis of assumptions concerning the ratio of such employment to total population.

Forecasts of the future demand for housing were based either on a population estimate divided by projected average household size or on the area available for residential construction and estimates of densities (usually in

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<sup>7</sup> Mathematically, in terms of numbers of persons,

$$M_t = (P_{T+t} - P_T) - N_t$$

where  $M_t$  = net migration that took place during time period  $t$ ;

$P_{T+t}$  = total population of the area in year  $T + t$ ;

$P_T$  = total population of the area in year  $T$ ;

$N_t$  = net natural change during time period  $t$ .

terms of families per acre). School enrollment forecasts frequently were made from estimates of kindergarten or first grade enrollment derived from the population forecast, and of assumed survival and drop-out rates. Rougher projections often involved a simple assumption of a fixed school enrollment to total population.

### Subject Matter Coverage of the "Local 701" Studies

Twenty-nine of the 36 "local 701" studies for which data were shown earlier in this monograph gave evidence of an attempt to show all of the relevant information for the planning process for the community under study. As noted earlier, some of these studies were in the form of a completed Comprehensive Plan or Master Plan. Others were reports, surveys or items of research performed for the Plan.

The other seven reports were research studies of a specific aspect of the community. Four of these studies concerned themselves with population and the economy, while the remaining three were devoted exclusively to studies of the economy.

Retail trade areas were explicitly analyzed in four of the studies while traffic and parking problems of the business district were discussed in another. The most detailed treatment of problems of the central business district was given in the planning survey report for the borough of Jenkintown.

Explicit proposals for improvement of the local economy were found in only a small number of studies. Most interesting from this standpoint were studies of Nanticoke, Steel Valley, and Pottstown. The Pottstown study indicated an awareness of cyclical vulnerability and pointed to the need for overcoming extreme sensitivity to these business fluctuations through industrial diversification. Specifically, measures were suggested for reducing the community's dependence upon metal and durable goods industries. The Steel Valley study recognized the same problem, but maintained that effective diversification should be sought at the regional rather than the local level. It contended that the most promising prospects for industrial development were to be found in industries most closely related to types of manufacturing already found in the region.

### 3. "Regional 701" Studies

The "701 Program" provides for the financing of comprehensive planning in metropolitan, regional and other urban areas as well as in smaller communities, such as those heretofore discussed. In terms of the method by which these localities obtain planning assistance under the program, cities, municipalities and counties with less than 50,000 population make direct application to their State planning agencies, which then make application to the H.H.F.A. On the other hand, official State, metropolitan and regional planning agencies submit applications directly to the H.H.F.A. Regional Office in their areas. A third method by which planning assistance is provided is that official governmental planning agencies in areas adjacent to rapidly expanding Federal installations and localities which have suffered major disasters may apply either to the Regional Office of the H.H.F.A. or to the State planning agency. Reports generated by this third type of planning assistance are outside the scope of this study. In this section, an examination is made of the economic survey sections of comprehensive plans generated under the second method mentioned above, namely, studies arising from direct grants by H.H.F.A. to official State, metropolitan and regional planning agencies. In July, 1961, there were available "economic base" reports for the following eight of the fifteen regional planning projects financed in Pennsylvania under the second method: Wilkes Barre/Hazleton Metropolitan Area (Luzerne County), Central Berks Region, Harrisburg Region, Blair Region, Central Lycoming Region, Washington Region, Lebanon Region and Monongahela Region. These studies are the specific subject matter of this section. The nature of these studies is described first and is followed by an appraisal of both "local 701" and "regional 701" economic surveys carried out in Pennsylvania.

It is generally agreed that it is desirable to develop plans for metropolitan or urban regions as a whole and to have plans for individual municipalities and communities developed, coordinated and meshed in with these plans for broader areas. These overall plans for the region should provide a framework for the individual local plans; the separate plans for individual cities, townships and boroughs should in sum yield a sensible, interrelated, internally consistent set of plans. It would be patently silly, for example, if all of a number of political jurisdictions within a given region attempted to attract and develop the same type of industry, whereas the overall regional plans called for a diversification of industry to decrease the perhaps current cyclical vulnerability of the region. Existing and future situations regarding community facilities, urban renewal, land use, population, housing, the economy, transportation, and so on, in short all of the relevant component parts of the physical, social and political environment should ideally be studied and put together into a significant whole in the regional comprehensive plan. Sound regional planning for urban areas in their entirety has been one of the major emphases of the "701 program" and H.H.F.A. has continually encouraged the solution of common problems through planning which cuts across arbitrary political boundaries such as city, county or even state lines.

#### Definition of a "Region"

What, however, is a "region" and for what types of regions have the studies referred to in this section carried out economic surveys as parts of comprehensive plans? The answer to the first question is a difficult one par-



ticularly because of the multiplicity of meanings that have been attached to the term for different purposes. Furthermore, considerable controversy has been associated with certain of the senses in which the term has been used. According to Perloff and others, "The term 'region' is generally used to describe a group of geographically contiguous areas which have certain common or complementary characteristics or which are tied by extensive interareal activity or flows."<sup>8</sup> The choice of the geographic areas which make up these regions is limited in actual analysis by data availability and also by the degree to which such areas can be combined on the basis of pertinent criteria. The two different types of regions implied by the preceding definition have usually been referred to as "nodal" regions and "uniform" regions. The notion of nodality refers to relationship or orientation toward a node or central place. Therefore a "nodal region" pertains to the geographic area over which an activity radiates out from an urban center. On the other hand a "uniform region" refers to an area over which an economic or other function or characteristic is relatively homogeneous, as, for example, a manufacturing region or a climatic region. This distinction, described from the viewpoint of geographers, is clearly spelled out by James and Jones as follows:

"No matter what criteria are invoked in defining them, geographic regions of all kinds may ... be grouped under two heads according to whether they are uniform or nodal.

Uniform regions are so throughout. The uniformity is not complete for there is always a certain range of characteristics permitted by the criteria, and there are irrelevant differences which are disregarded. But within the limits set by the criteria, regions of this kind are uniform. A climatic region is an example. If it is a multiple feature region its uniformity is defined in terms of the association of features.

Nodal regions are homogeneous with respect to internal structure or organization. This structure includes a focus, or foci, and a surrounding area tied to the focus by lines of circulation. For example, an area of newspaper circulation is a single-feature nodal region, the trade area of a town a multiple-feature nodal region ... Internally nodal regions are marked by a diversity of function that goes far beyond the range of minor variation permitted in uniform regions."<sup>9</sup>

There is certainly no clear-cut dichotomy between these two types of regions. This nodal-uniform classification stems from central place theory and it is doubtless true that the relationship between locations and functions is

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<sup>8</sup> See H. S. Perloff, E. S. Dunn, Jr., E. E. Lampard and R. F. Muth, Regions Resources and Economic Growth, Johns Hopkins Press, Baltimore, Md., 1960, page 4.

<sup>9</sup> James, Preston E. and Jones, Clarence F., editors. American Geography: Inventory and Prospect, Syracuse University Press, Syracuse, 1954, pp. 36-37.



far from completely described, much less explained, by this type of classification. Nevertheless, conceptually, the classification is quite useful. Considering the "regional 701" studies herein being considered, the regions included are probably closer to the characterization of "nodal" rather than "uniform." For example, cities involved in the city-region relationships are Reading (Central Berks Region), Altoona, (Blair Region), Harrisburg (Greater Harrisburg), etc. Of course, even theoretically, there is no such thing as a set of distinct, uniquely defined regions. Central place theory deals with hierarchies of supply and market areas which are related to different functions stemming from the nodal point. Furthermore, the so called "hinterlands" of cities frequently overlap and this overlapping differs according to economic or other functions.

Returning to the idea that there are a wide variety of meanings attached to the term "region," in the work of regional scientists, the United States may be considered a region, geographical classifications of states such as New England, Middle Atlantic, etc. may be treated as regions and hierarchies of regions and sub-regions within regions may be constructed. Methods such as factor analysis, scaling techniques and various typology or classification schemes have been used to define regions.

Even for reasonably specific purposes, such as selecting appropriate "urban economic regions" for economic base analysis in the strict basic-service sense, there are a wide variety of technical problems concerning base area delimitation. These are ably discussed by Andrews,<sup>10</sup> who comes to the conclusion that for field research on problems of the urban base, the most appropriate base areas are the Bureau of the Census Standard Metropolitan Areas although he lists a number of disadvantages (as well as advantages) to this approach. Standard Metropolitan Areas, or more properly, Standard Metropolitan Statistical Areas are composed of whole county units. They always include a city of 50,000 or more in population and the county containing that city. Contiguous counties are included based upon a number of requirements concerning number or proportion of non-agricultural workers in the area and degree of economic and social integration of these counties with the central county of the area.

The "regions" included in the Pennsylvania "regional 701" studies are considerably smaller than Standard Metropolitan Areas. Of the eight economic surveys referred to earlier, only one covered a geographical area as large as a county, namely, the one for the Wilkes-Barre/Hazleton Metropolitan Area which is identical with Luzerne County. Typically, the regions consisted of an urbanized area containing a city and a number of

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<sup>10</sup> Richard B. Andrews, "The Problem of Base Area Delimitation, 'Land Economics, November, 1954, pp. 309-319.

contiguous townships and boroughs.<sup>11</sup>

### General Nature of "Regional 701" Economic Surveys

In considering the "regional 701" economic surveys, it is important to keep in mind, that just as in the case of "local 701" studies, these studies are planning oriented. Therefore, it is evident that the economic study tends to be treated as simply one element of the comprehensive or master plan with other considerations such as land use, population, housing, transportation, community facilities, sanitation, health, programming of capital improvements, planning controls and regulatory and administrative measures representing important elements of the overall plan and program. It is, of course, not meant to imply that the aforementioned elements are non-economic. Some of them are, in fact, sometimes included in the economic survey itself. However, along the lines of a point made earlier, it is only fair to recognize, in any appraisal of "regional 701" economic surveys, that in view of the statutory obligations of regional planning commissions, the regional economy is only one of many important aspects of the region to be investigated, albeit often the crucial one.

Points of view concerning the importance attached to the economic survey are clearly varied, but it is probably true that most authors of the "regional 701" studies view these surveys as necessary to be carried out, along with land use and population analyses, at the outset of the formulation of a comprehensive plan for the region. As in the case of "local 701" studies, some authors clearly view other aspects of the plan as being more important and, therefore, make relatively short shrift of the economic study. Most of the "regional 701" economic surveys seem to attempt to provide useful data and some description and analysis of the current economic status of the region and its component communities with some indication of needs and future potentials. They tend to stop short of the formulation of concrete programs for future improvement and development. Clearly, on this latter point of the formulation of programs and also their eventual implementation, a host

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<sup>11</sup> The regions to which the eight "regional 701" studies pertained were as follows: Blair: City of Altoona; Townships of Allegheny, Antis, Blair and Logan; Boroughs of Bellwood, Duncansville and Hollidaysburg.  
Central Berks: City of Reading; 14 boroughs and 7 townships.  
Central Lycoming: City of Williamsport; townships of Armstrong, Hepburn, Loyalsock, Old Lycoming and Woodward; Boroughs of Duboistown, Montoursville and South Williamsport.  
Greater Washington: City of Washington; townships of Canton, North Franklin and South Strabane; Borough of East Washington.  
Harrisburg: City of Harrisburg; Townships of Lower Paxton, Lower Swatara, Susquehanna, and Swatara; Boroughs of Highspire, Hummelstown, Middletown, Paxtang, Penbrook and Steelton.  
Lebanon: City of Lebanon; Cornwall, North Cornwall, North Lebanon, West Cornwall and South Annville.  
Monongahela Valley: Cities of Monessen and Monongahela; Township of Carroll and Boroughs of Donora, Dunlevy, New Eagle and Speers.  
Wilkes-Barre/Hazleton: Luzerne County.



of problems arise whose examination lies beyond the scope of this study. The multiplicity of local municipalities, each with its own decision making powers and legal powers for the execution of plans and programs, means that much effective planning, as a practical matter under current governmental arrangements can only be carried out at local levels. Moreover, as R. C. Wood points out, "The creation of special districts, the painful expansion of local tax bases, the perfection of grants-in-aid techniques, have resulted in an elaborate array of jurisdictions and intergovernmental relations which seem passably adequate for the discharge of service duties. But, by the same token, the accomplishments in one field add complication in others - and the result is the abdication and frustration of programs designed to meet region-wide needs or provide guidance for the direction of metropolitan growth . . . . . Metropolitan governments, intent on preserving legal autonomy, and pursuing a policy of continued proliferation, have found it difficult to devise integrated programs on matters affecting the regions as entities."<sup>12</sup>

However, urban regional planning, which addresses itself to broad, meaningful economic areas, is obviously of crucial importance in presenting a framework within which intelligent planning decisions may be made by individual local governmental units.

### Types of Data

The types of data used in "regional 701" studies were, by and large, about the same as in "local 701" studies and, therefore, no extensive discussion on this point is warranted. About the same relationships between usages of Census, State and local sources was apparent. Also, the same lack of reliance on the collection of primary data was evident. No important different types or sources of data were used that were not also utilized in most "local 701" studies.

"Regional 701" studies tended to present more extensive information from the usual sources than did "local 701" studies. If, however, the most rudimentary local studies are excluded (usually dealing with quite small communities), differences in the nature and amounts of data presented tend to disappear. The regional studies usually presented the same types of data for each of the townships and boroughs included within the region.

There was considerable variability in the thoroughness of the analysis carried out in the regional studies which meant that there was similar variability in the amount and variety of data presented and used. The planning projects were in varying stages of completion, so it is conceivable that in certain instances later reports may contain more detailed analysis and more intensive utilization of data collected.

In "regional 701" studies as well as "local 701" studies, most of the data used were obtained from well-known and easily accessible sources. It appears that willingness and ability to make full use of available information are critical factors bearing on the validity and utility of these economic surveys.

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<sup>12</sup>Robert C. Wood, Metropolis Against Itself, Committee for Economic Development, New York, 1959, p. 30.

## Analysis and Projections

The variability earlier referred to in the nature of analysis carried out in economic surveys included in "regional 701" studies stemmed in part from the differences in purposes of these studies. Some of the differences among these studies can be related ultimately to the nature of the problems faced by the different regions. Two of the regions for which studies were available were faced with special problems of economic development. These were the Monongahela Valley and Luzerne County. In each of these areas the economy has been traditionally concentrated in one specialized industry, primary steel in the Monongahela Valley and coal mining in Luzerne County. The problems arising from lack of industrial diversification appeared to have the effect of creating an increased awareness of the necessity and importance of a detailed economic survey as a pre-condition of planning. The studies of both of these regions presented more data and contained more detailed analysis than most of the surveys reviewed in this study except for a few "local 701" studies. Since most of the comment which could be made concerning the other regional studies would be repetitive of what was said for the local studies, attention is here centered solely on a descriptive review of these two studies.

The economic survey of the Monongahela Valley Region may be described as a statistical summary of the economic characteristics of that region. It includes sections on the history of settlement and industry, physiography, population, housing, municipal services, transportation, mineral and agricultural resources, employment and industry, economic indicators, retail and service activities and a summary statement with recommendations. The Monongahela Valley Region is located in southwestern Pennsylvania about 30 miles to the south of the City of Pittsburgh. It lies along the banks of the Monongahela River in Washington and Westmoreland counties. The regional planning commission is represented by the cities of Monessen and Monongahela, the Boroughs of Charleroi, Donora, Dunlevy, New Eagle and Speers and the Township of Carroll.

The primary analytical device employed in the study of the economy of the Monongahela Valley Region was the economic base-ratio method. Ratios such as service employment to basic employment and total population to basic employment were used both descriptively and analytically. Descriptively, they were used to characterize the region's economy as part of the Pittsburgh metropolitan area. Analytically, they were employed in the estimation of resultant population levels after assumed industrial development takes place.

In its description and analysis of employment and industry, the study made comparisons of the balance of basic with service workers and with the entire population comparing the Monongahela Valley with the Pittsburgh Standard Metropolitan Area and with the so-called "ideal ratio" of 1:2:6 for basic workers to service workers to total population. Secondly, a discussion was presented of the relative importance of the various types of industrial activity now existing in the valley and lastly, prospects for future industrial development were examined and suggestions were made for the guidance of such development.

The ratios of population to basic employment and service employment to basic employment were found to be lower in the Monongahela Valley than for other parts of the Pittsburgh S.M.A. and for the similar "ideal ratios."



Thus, it was concluded that "a share of the service activity needs of the population are being provided elsewhere," namely in Pittsburgh. However, the study detected a shift towards more "white collar" workers and fewer "blue collar" workers or more specifically toward a higher ratio of service to basic activities. It was felt that this variation was associated with specialization within the regional economy and would continue to produce serious local problems.

An interesting, quite straight-forward analysis was made of population trends since 1910 for each community with some economic rationalization of the patterns discerned. For example, it was concluded that the growth pattern for three of the communities was primarily a function of basic employment. The relatively rapid growth in early years was attributed to in-migration of workers for the steel and glass mills. Subsequently, with a country-wide increase in industrialization, these industries tended to disperse to other parts of the country, decreasing considerably the importance of their original location. A corresponding out-migration from the Monongahela Valley, primarily of young people, then began to take place. Among the factors contributing to this outflow were decreased manpower requirements because of technological improvements, lack of industrial diversification and relatively poor living conditions in the mill towns. Another reason for population loss was the physical impossibility for the community to grow since annexation was not practicable. The study made a brief, somewhat sketchy attempt, which, however, was probably adequate for this purpose, to determine the age characteristics of the people leaving the valley. It concluded that the Valley was serving to provide youth for other areas since the median age of the Valley population was increasing more rapidly and the age distribution was growing older faster than was true for Pennsylvania or the United States.

The population to basic employment and service to basic employment ratios for the Monongahela Valley in 1950 were used to derive estimates of the increase in population that could be expected as an effect of industrial development. "Potential new basic employment" was estimated from the land area available for industrial development and an assumed density of workers per gross acre. Then "potential new service employment" and "potential new population" were estimated based on the 1950 ratios.

Total population forecasts, however, were obtained for each political subdivision of the Region, by taking as the assumed rate of change for 1960-1970 the average of the rates of change for the two decades, 1940-1950 and 1950-1960. It seems, therefore, that no direct use was made of the "potential" employment and population estimates described above.

The study is realistic in recognizing that considerable additional research is needed and in particular notes that the availability of good industrial land areas is as important a factor in the economic future of the Region as any element included in the study. In this connection, it is indicated that an integrated study is needed of major highway and total urban land uses within the Region. A brief analysis was given of the most probable available industrial land reserves and it was concluded that these areas must be retained, planned and developed for industrial purposes.

No space will be devoted here to detailing the types of information presented in the aforementioned section on employment and industry. The data

were obtained, by and large, from the usual sources and were presented in a direct, uncomplicated manner. Since, however, our focus in a later study is on data availability and, in particular, on possible improvements in the Pennsylvania statistical program from the standpoint of urban analysis, a few brief comments on data matters will now be given.

The Monongahela Valley Region study recognized and made explicit mention of the problem of statistical reliability of the data in carrying out the classification of employment into basic and service categories. Apart from the other well known technical problems of base identification, there is the problem that workers may reside within one community of the Region yet work in another community, usually within the Region, but not necessarily so. For example many people residing in the Monongahela Valley work in primary steel plants in municipalities which are not members of the Regional Planning Commission. Also, of course, there are people employed in the Region who do not live in member municipalities. Clearly, the accuracy of base-service ratios may be considerably affected by this commutation problem if no suitable adjustment is made.

The study also attempted a separate estimate of current base-service population ratios using industries reporting in the Industrial Directory of Pennsylvania for 1956 and 1959. The same criteria were used as for the 1950 ratios. The usefulness of U. S. Census data was alluded to by indicating that when 1960 data are available, industrial employment reported by the Industrial Directory for 1959 can be compared with numbers of manufacturing employees living in major municipalities of the Region. The study speculated that, "This will probably show that those employees who move out of their home community to work are fairly well balanced by those who move in from outside." Another data problem involved in the use of the Industrial Directory was the under-representation of small service industries.

About the only substantive conclusion reached from the base analysis described above was that "the economic strength of the area is in basic activities and the low proportion of service activities indicates a great opportunity for growth in service enterprises." No real attempt was made in this study at economic projection but a brief section was devoted to prospects for future industrial development. It was indicated that industrial development means competition with other regions. Also noted was the fact that the Region must be made more attractive to industry, with the specification particularly of the need for good community facilities, good government and a "forward looking energetic policy on the part of its citizens to keep abreast of the times." Programs were alluded to which were already underway and should be continued and expanded such as smoke abatement, comprehensive planning, re-development, reforestation, sewage treatment, cultural and recreational programs, and industrial development groups.

Turning now to the Luzerne County Planning Commission's "Economic Base Report," we find here one of the most interesting studies from the standpoint of methods of analysis. It was heavily oriented toward demographic analysis and represented a case in which forecasts of population, labor force, employment and unemployment were formally and explicitly connected with one another.



The study concerned itself with the Wilkes-Barre/Hazleton Metropolitan Area (identical with Luzerne County) which is located in the mountainous anthracite region of northeastern Pennsylvania. Economic problems arising from the decline in importance in anthracite mining over the past 40 years or so were the major focus of this report. Luzerne County has historically been one of the major anthracite producing counties in the country. The decline in the number of jobs available in this industry and the consequent out-migration of many of the younger and more vigorous members of the labor force from the Wilkes-Barre/Hazleton Area are major problems having important ramifications on the economic structure of the Area. In recognition of this fact, the study states in its introduction that, "The Wilkes-Barre/Hazleton Metropolitan Area has been confronted with the necessity of supplanting a major portion of its economic base. The key to this, of course, is jobs -- job opportunity for all the residents of the community, not just the men, the skilled, the educated, the youth, or the women -- but ample opportunity so that most all of its residents who wish to work may do so at the type of jobs for which they are best fitted with salaries commensurate to their abilities. The future well-being of the residents of this Metropolitan Area, including the range and standards of public facilities and services, will depend largely on the kinds and extent of economic development and especially of new manufacturing . . . "

The study contains sections devoted to the composition and characteristics of the economy, wealth, anthracite mining, manufacturing, agriculture, retail, wholesale and selected services, future labor force, economic resources or assets and possibilities for expanding and otherwise strengthening the economy. A separate "Population Report" spells out the methods used in obtaining population, labor force, employment and unemployment estimates.

Most of the study consists of the usual statistical descriptive material on the areas specified above. In the section on the composition and characteristics of the economy, again probably because of the particular problems faced by the Region, the entire statistical presentation is in terms of labor force, employment, unemployment and occupational distributions and time series estimates. One interesting point from the data requirements focus of our next monograph is the fact that often the data shown did not go beyond 1950, with many time series comparisons being restricted to the 1940-1950 period. This is a reflection of the practical limitations imposed upon metropolitan analyses of this type by the long period (ten years) which elapses between U. S. Population censuses. Quite recent data were given for employment and unemployment because of the availability of U. S. Bureau of Employment Security data for labor market areas. In general, however, where the data were shown by breakdowns such as sex or type of industry, 1950 was the latest year given. An interesting brief discussion was given on the vexing methodological problem of the commuting of the labor force. Of particular help in this connection was a special survey on commuting carried out by the Bureau of Employment Security in August, 1958.

A number of comparisons were given for labor force, employment and unemployment trends and distributions in the Wilkes-Barre/Hazleton Metropolitan Area with analogous data for the Anthracite Region, (Luzerne, Schuylkill, Lackawanna, Carbon and Northumberland counties), Pennsylvania and the United States. These comparisons enabled the drawing of conclusions such as that in 1940 and 1950 the Metropolitan Area had substantially higher percentages of those 14 years and older in the total population than had either Pennsylvania or

the United States, that the proportion of the Metropolitan Area population in the labor force was less than for the larger areas and most importantly, that lower percentages of the civilian labor force were employed in the Area than was true for the State and Nation. Similar types of comparisons of percentage changes over time in numbers employed by industry groups revealed large decreases in mining employment in the Metropolitan Area, the Anthracite Region and the State, but large increases in manufacturing for both the Metropolis and Region - these percentages were twice the corresponding figures for the State. By 1950, manufacturing had displaced mining as the largest employer in the Wilkes-Barre/Hazleton Metropolitan Area. However, it may be noted that this was largely attributable to the extensive participation of women in manufacturing - about one half of the working women being thus employed. Of course, unemployment was revealed as a most serious problem, with an estimated 14.6 per cent of the labor force unemployed in the Metropolitan Area as of March 1960.

In a section entitled "Wealth," this study gives a relatively brief statistical description of the wealth and also income of the Metropolitan Area, again with analogous data being often shown for the Anthracite Region, the State, the Nation and occasionally for each of the counties of the Region. Data such as bank deposits of individuals, partnerships and corporations, savings and loan assets, values of new mortgages, savings bond purchases, assessed valuations, "buying power", wages paid and other income data were given as wealth and income indicators. The findings indicated generally lower levels and lower rates of growth in both incomes and wealth for the Metropolitan Area than for the State and the United States. One comment on data availability may be made at this point. For figures such as median family incomes and percentages of families with incomes below and above specified levels, the study used U. S. Bureau of the Census sources. The data shown were for 1949. Although somewhat later data were shown for such items as "effective buying power" (source: Sales Management Magazine) "first quarter wages by type of industry" (source: U. S. Department of Labor, Bureau of Labor Statistics), this is indicative of a data difficulty which will be dealt with in some detail in the next monograph, i. e., the lack of appropriate, up-to-date income figures for purposes of metropolitan analysis.

A section of the study devoted to the subject of anthracite mining gives brief verbal and statistical treatment to such topics as sources of coal, production, days worked and coal consumption. Manufacturing was analyzed with emphasis being placed upon the size of manufacturing establishments, total employment in manufacturing industries, numbers of establishments, employees, payrolls, value added, capital expenditures and women's part in local manufacturing. The approach was again purely descriptive with no sophisticated analysis attempted. However, the increasing importance of manufacturing in the Wilkes-Barre/Hazleton Metropolitan Area is clearly revealed. Manufacturing ranked first in number of paid workers, total payroll and value created according to the 1954 U. S. Census of Manufactures. A picture emerges of a concentration of manufacturing employment in this Metropolitan Area in small plants, mostly garment firms, with generally low wage scales prevailing. Again, from the standpoint of data availability, most of the information on manufacturing was derived from the U. S. Census of Manufactures of 1954 and State sources being utilized for such items as employment by major production industry groups and total employment in manufacturing industries. U. S. Census data were used to present the statistical detail



in a subsequent section on retail, wholesale and selected services.

Turning now to the methodologically most interesting section of the study, "future labor force," we find here mainly the results of an analysis of the future population of the Wilkes-Barre/Hazleton Metropolitan Area based on the separate Population Report. Projections of employment, unemployment and labor force were given in the Economic Base Report by quinquennia from 1955 to 1980 with separate estimates shown for manufacturing, basic and service employment. As indicated earlier, forecasts of population, labor force, employment and unemployment were formally and explicitly interrelated.

The method commences with a survival of 1940 Metropolitan Area census population figures by age-sex groups. Survived births were added and the resulting figures were subtracted from 1950 census age-sex groups. (Census figures were corrected for underenumeration.) These differences were identified as the number of migrants over the ten year period. Percentages of migrants by age-sex groups to total migrants of each sex obtained from the above data were assumed to remain constant until 1980. Net out-migration for the labor force during the decade 1940-1950 was obtained in a similar manner by comparing the survived labor force with the census corrected labor force.

In building up 1960 estimates, the 1950 corrected census population figures were again survived for a decade adding survived births. However, projections of the labor force were refined in order to separate employment in basic and service industries. Essentially, this was accomplished as follows. Pennsylvania Bureau of Employment Security data on employment by basic industrial group, corrected for commuting, were projected to the end of 1960. A 1960 average ratio of basic to service employment was established by using January to March 1960 data. Estimates of service employment and total employment for the year (bimonthly annual averages) were then obtainable.

Labor force net migration was obtained for 1950 to 1960 as the difference between the 1960 labor force survived from 1950 and the estimated 1960 labor force. Total (net) migration could then be estimated by projecting to 1980 the ratio of labor force migrants to total migrants observed between 1950 and 1960; this ratio was assumed to remain constant to 1980.

High, medium and low projections of employment, unemployment and labor force were arrived at by a combination of use of U. S. Bureau of the Census age-sex labor force participation rates, birth rates and survival rates and assumptions made concerning the Metropolitan Area. These assumptions are not clearly spelled out and in fact are only explicitly referred to for the "medium" estimates. Perhaps the safest way to reflect their nature is to quote from the Population Report, "These medium estimates are based on total employment in our Metropolis averaging 117,600 in 1960, and thereafter increasing to over 126,000 by 1970 and nearly 133,000 by 1980; a reduction in the proportion unemployed from an estimated 14.0 percent of the labor force in 1960 to 8 percent in 1980; a slight decline in birth rates by age of mother from the 1955-1957 level; a moderate increase in age-specific death rates because of improved medical practices; and only moderate increases in productivity, including automation."

Forecasts of total employment were broken into basic and service employment based on extrapolations of the basic/service employment ratio.

It was stated that, "Between 1960 and 1965, the ratio of basic to service employment is expected to decrease from 1:1.19 to 1:1.14, then increase to 1:1.16 by 1980." (The use of the terms "decrease" and "increase" appear to be reversed.) Again, the basis for the assumption is unclear and unspecified. Basic employment was broken down into components, such as manufacturing, mining, government. Separate forecasts were made for each component, again on the basis of informalized presuppositions. Manufacturing employment was subclassified into durable and non-durable manufacturing employment. The study notes that this latter classification was undertaken because the major factor in the future economic development of the Wilkes-Barre/Hazleton Metropolitan Area is manufacturing. Estimates of the number of new jobs needed in order to fulfill alternative goals in terms of percentage unemployment and estimates of the amounts of new investment required in order to produce the necessary number of new jobs were made.

Well written and informative descriptive sections on the economic resources or assets of the Metropolitan Area and possibilities for expanding and otherwise strengthening the economy conclude this report.

Although the appraisal of the economic surveys covered in this monograph has been deferred until the next section, a couple of comments are perhaps appropriate at this point. The analysis utilized in the Luzerne County study was among the most detailed and explicit that was found in the "701" studies, either "local" or "regional." However, even here, serious analysis was restricted to a single section, i.e., "future labor force." Most of the remainder of the report is in the nature of a listing of a large number of economic facts with the most evident conclusions being drawn from these data.

#### 4. Appraisal of "701" Economic Surveys

The remarks which follow are offered in the spirit of presenting possible constructive comments based upon an examination of the "701" economic surveys recently carried out in Pennsylvania. The purpose here in particular is to focus upon methods of economic and statistical analysis utilized in these studies. In fairness, it should be indicated that the Federal Government has not provided the various state, regional and municipal planning agencies with detailed and definitive statements of program objectives nor with precise standards for the analyses and reports produced under the "701 program." If the Federal Government had done this, however, and had it imposed much closer supervision and control of program activities, it would undoubtedly have been subjected to severe criticism. The result is that it is not clear to the planning agencies nor to the authors of the planning reports precisely what is expected as to the content of an "economic base study."

Furthermore, the communities whose surveys were analyzed in this report brought to the program a multitude of diverse goals. Some of the plans were clearly initiated because of a desire to solve a particularly pressing local problem. Although the "comprehensive planning" envisioned in the program includes broad based studies of land use, economic base, traffic, transportation, housing conditions, community facilities, programming of capital improvements, long range financial plans, intergovernmental coordination of planning activities, and so forth, it is clear that many of the local governments, with little previous planning experience and very limited financial resources, could at best carry out very modest studies pointing in the direction of the comprehensive objective. In many cases, since only a few hundred dollars was allocated for the economic survey portion of the planning study, thorough-going analyses could not be expected to result.

The major limitation of the "701" economic surveys in Pennsylvania is their descriptive nature and lack of analytical content. This pertains particularly to the "local 701" and to a lesser degree to the "regional 701" studies. Reference was made earlier to the distinction between economic base studies and economic surveys. Taking the point of view that economic base studies should be extremely broad economic surveys, Ratcliff describes the desirable nature of such investigations as follows:

"In general, the process of appraising the economic base of a community is a matter of gathering all available facts of economic significance, analyzing past experience and present status, and basing the forecast on an extension of recent trends as modified by those factors of change which can be discerned. More specifically, this procedure involves a prediction of the nature, volume, and stability of employment and income in the community, and a forecast of the characteristics of the population. As a first step, there should be an inventory of local economic resources - the geographic advantages of the community, the manpower resources, and the productive activities now being carried on . . .

The analysis of the economic base of a community requires both a cross section description and the identification and evaluation of forces of



change."<sup>13</sup>

Viewing the "701" reports according to a standard such as Ratcliff's, it would appear that the major effort in those studies went into the attempt to gather "available facts of economic significance." In this attempt, as earlier indicated, information was recorded for population and labor force most frequently; housing, industry, retail trade, services and incomes somewhat less frequently. In general, this information was in the form of data which were readily available from secondary sources. There were conspicuously few instances in which gaps in available information were filled in by independent estimates. Sample surveys for such information as income distributions, place of work, wage rates and more pertinent employment data than those available were rarely undertaken. Generally, the impression created was one of an unsystematic collection of incomplete and not clearly interrelated facts. To a certain extent, of course, this reflects the fact that there is no well thought out system of basic economic information available at the local level.

Furthermore, there was little in the nature of statistical or economic analysis of past trends, explicit statements of relationships between relevant demographic and economic factors or serious analysis of dynamic factors making for change in underlying structural relationships. It follows that there was virtually no serious examination of cyclical sensitivities. There was also a general absence of projections of measures of size or growth or decline of the local economy. In particular, there was a lack of well worked out employment projections with interrelated future land development site proposals. Where these or other projections were made, they were usually based on unstated and unformalized presuppositions.

Insufficient emphasis also was given to market area analysis. No doubt, unavailability of data was again a factor. It would seem to be essential, however, particularly in the "regional 701" studies, covering metropolitan-regional areas or entire counties, to carry out careful analyses of trends in the redistribution of employment and industry with emphasis on component communities and regions, shares of various economic variables and development potential relative to other parts of the region, state and nation.

Finally, there was insufficient formulation, in the economic surveys and other "701" reports, of programs for balanced economic development, including estimates of quantities of land required with rates of utilization, anticipated private and other investment, and the administrative regulations, industrial incentives and financial programs necessary to achieve these objectives.

All of the above mentioned deficiencies point in the direction of the necessity for some logical framework of analysis. The need for this skeletal structure as a tool of research in urban economic studies has been ably pointed out by Tiebout.<sup>14</sup> He makes the irrefutable point that the researcher who tries to study everything about a community finds himself facing an impossible task. Some of the "701" economic surveys seemed to attempt the listing of some information on every apparent important economic factor. Naturally, there were

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<sup>13</sup> Ratcliff, Richard U., Urban Land Economics, McGraw-Hill Book Company, 1949, p. 42.

<sup>14</sup> Tiebout, Charles M., "The Urban Economic Base Reconsidered," Land Economics, February, 1956, pp. 95-99.



major difficulties in accomplishing this objective even if only because of data problems.

The small size of many of the communities studied raises questions concerning the potential usefulness of highly sophisticated analyses. However, even in the "regional 701" studies where the geographic areas were closer to the concept of a "basic economic unit," that is, "a contiguous area of integrated economic activity which clusters around a center toward which these activities tend to gravitate,"<sup>15</sup> formal economic analysis was usually absent. A few of the studies should probably be considered exceptions to this statement, because the analyses used therein would probably be characterized as "economic base analysis" and the use of the "economic base" concept in its technical sense does at least constitute a framework for the study of certain economic relationships in an area.

One feature of the "701" studies is that formal economic base analysis tended to be used in the "regional 701" rather than the "local 701" studies; that is, it tended to be employed in the case of larger geographic areas, as, for example, in the entire region of the Monongahela Valley and for Luzerne County. As indicated earlier, economic base analysis or for that matter any serious economic analysis was, in general, conspicuously absent from the "local 701" studies. Theorists have pointed out that if the economic base concept is tenable as a theory of economic growth, its validity decreases as the geographic size of the community studied increases.<sup>16</sup> To state it differently, they cast considerable doubt on the applicability of the theory for any sizable community. Their criticisms concentrate on the inability of the theory to explain crucial flows of goods and services within the community studied and to the doubtfulness of the meaning of the division of economic activity into the basic-service classification for large geographic regions.

There are many methods and techniques currently available for the study of the economies of communities. Some of these will be referred to subsequently. The general failure to use these or other formal methods of analysis in the "701" surveys means that such studies often become mere listings or partial economic inventories. While the listing of assorted economic facts pertaining to an area is a harmless enough pursuit, such a procedure does not aid particularly in the understanding of the interrelationships of the various elements within the area's economy, nor of the relationships with the outside world. The absence of understanding of the functional organization of the economy, economic linkages and interdependencies implies that projections and planning tend to be carried out on unformalized, tenuous, intuitive bases. Finally, the lack of a structure explaining existing economic relationships means that not only is the foundation for prediction absent, but also that no rational framework is provided for guidance in reacting to shifts in existing relationships.

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<sup>15</sup> Solomon, E. and Bilbija, Z. G., Metropolitan Chicago, The Free Press of Glencoe, Illinois, 1959, page 9.

<sup>16</sup> Pfouts, Ralph W., The Techniques of Urban Economic Analysis, Chandler-Davis Publishing Company, 1960, pp. 1 and 2.

## The "Economic Base" Concept

As indicated above, the most sophisticated of the "701" studies carried out in Pennsylvania utilized the "economic base" concept as a tool of analysis. However, how useful and how pertinent is even this level of analysis? There is a substantial literature on the economic base theory, so only an extremely brief statement of the surrounding controversy will be given here.

The idea of the "economic base" was referred to earlier in terms of the division of a community's economic activity into the dichotomy of "basic" ("export," "primary," "city-building") and "service" ("non-export," "secondary," "city-serving"). It was indicated that "basic" activity is thought of as being the major reason for the existence and growth of the local economy while the "service" sector is present only to serve the "basic" workers through the provision of goods and service for local consumption.

Planners have used this "economic base" idea as a tool of analysis for urban areas since at least the 1920's. In 1928, the concept was explained in considerable detail in the Regional Survey of New York and Its Environs carried out by the New York Regional Planning Committee. This type of analysis developed considerably during the 1930's and since that time extensive use has been made of the notion of the "economic base." An increasing degree of controversy has been accumulating concerning its validity.

In undertaking an "economic base" study, the planner probably has the implicit purposes of accomplishing a description of the urban economy, establishing classifications which enable him to understand important cause and effect relationships, and enabling projections into the future to be made. Furthermore, whether he recognizes it implicitly or explicitly, he would find it desirable to be able to assess the effects of specific policies or controls and to be able to judge the impact of various external and internal influences on the economic well-being of the community. Critics of studies using the "economic base" concept, have raised serious questions concerning the ability of such studies to accomplish these purposes.

The "economic base" approach is attacked as being at most a descriptive device and even here as having its difficulties. It is seriously questioned whether accurate identification and measurement of basic and service activities can be effected. The appropriate measurement technique for separating these two types of activities is a subject of considerable debate with at least the following units of measurement proposed: numbers of jobs, dollar payrolls, physical production, value of production and value added. Furthermore, activities leading to exports of capital from the community are much more difficult to identify than those leading to exports of goods and services and tend therefore to be ignored.

Opposition to the economic base theory has mainly come from outside the ranks of planners and administrators, namely from economists and regional scientists engaged in the study of urban problems. However, doubts have arisen even within the ranks of planners. Hans Blumenfeld, a respected urban planner, in a well known critique of the basic-nonbasic concept, spelled out a long list of objections.<sup>17</sup> As an indication of the confused status of the real importance of

<sup>17</sup> See Hans Blumenfeld, "The Economic Base of the Metropolis," Journal of the American Institute of Planners, Vol. 21, 1955, pp. 114-132.



the basic-service distinction, he came to the conclusion that the "service" industries of a metropolis are the "basic" or "primary" ones while the "basic" industries are "secondary." His point was simply that he rejected the notion of the primary importance of "basic" activities since "basic" industries in a modern community cannot function without such services as the transportation system, communications network, and so on, and the community together with its services is the real foundation of industry. This point is particularly relevant in connection with the fact that planners have claimed that the basic-service distinction is useful for emphasizing which industries should be built up to improve the community's economy, on the assumption that such improvement is accomplished by improving the balance of payments. Blumenfeld points out that if the method is strictly applied, attention tends to be diverted away from those industries whose products the community now imports but which might be produced by the community itself; in fact, of course, the theory is bypassed and attention is focused on these very industries. After detailing a long list of objections to the theory, he concludes that, "The basic-nonbasic ratio is meaningful only in small and simply structured communities; the larger and more complex, that is, the more "metropolitan" the community, the less applicable is the ratio and the entire method." Furthermore, he concludes that because of various complications, the "multiplier" (ratio of total population to "basic" employment) is not useful as a population prediction device in metropolitan areas.

Many other authors have raised serious objections to economic base analysis, both in a static sense for the understanding and explanation of the economy of a city or region and in a dynamic sense, for purposes of prediction. Since, as noted earlier, an extensive literature exists on this point, further discussion of these objections does not seem warranted here.<sup>18</sup>

Although it is not the purpose of this background paper to propose alternative methods for urban economic analysis, it seems appropriate at this point to make a very brief mention of some theories and methods developed primarily in the post-war period by economists and regional scientists. In view of the virtual lack of formal analysis of any kind, except for occasional attempts at demographic analysis or sketchy studies along the lines of economic base theory, in the "701" reports examined here, it would seem worthwhile for the authors of these reports to give consideration to these other possibilities. It is not meant to imply that the soundness of each of the competing and conflicting viewpoints in this field has been firmly established. It has not. Considerable controversy still envelops the various theoretical and empirical approaches. However, it would appear that advantages which would probably accrue from the application of more formal approaches would include more precision in the statement of assumptions underlying predictions on the basis of which those who implement comprehensive or master plans are supposed to act, better bases of assessing the impact on the community's or region's economy of internal or external influences, and in general, a better basis for prediction, guidance and control of future development.

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<sup>18</sup> A compilation of such articles is to be found in Ralph W. Pfouts, The Techniques of Urban Economic Analysis, Chandler-Davis Publishing Company, 1960, pp. 213-359.

The attempts of one economist, Charles L. Leven, to adapt the economic base concept to an appropriate measure of the relative contribution of the various industries in a community to the area's total economic activity led to his use of the concept of income and product accounts for metropolitan areas along the lines of the national income accounting systems.<sup>19</sup> Professor Leven states, "Put in this form, the data collected provide an organic description of the central economic processes occurring in the metropolitan area; 1) the earning of exchange credit with the rest of the world through sales of goods and services "abroad" and through receipts of non-labor income and transfers from government, 2) the disposition of this exchange credit for goods and services imported for final use and for changing the area's net indebtedness with the rest of the world, 3) the relation of the foreign trade process to the local provision of locally used goods and services." Among the advantages of this system over economic base analysis, he cites the comprehensiveness of the approach in that consideration is given to all income sources and to imports as well, the description of the community's activity in terms of its ultimate economic goals, i.e. consumption and income and the avoidance of the tendency present in base analysis of treating trade and service activities as being unimportant.

Total economic activity is allocated into different sectors and these activities are then grouped into a set of double entry accounts to display flows of economic activity, the various components of the total and their interrelationships. Although it was possible to establish the overall magnitudes of the Elgin-Dundee economy by means of secondary data, certain allocations into sectors and other items required original field investigation, primarily through mail questionnaires sent to a sample of business firms, governmental and non-profit organizations and a personal interview sample survey of households. A brief section gives sample comparisons of the economic performance and status of the area studied with the United States and the use and value of these accounts and accompanying data on the industrial composition of the Elgin-Dundee area to the city planner are suggested. The total resources required for the study were full time of the author for one year, \$2100 of research expenses and nominal office facilities at Northwestern University.

The Elgin-Dundee Area had a population of about 68,000 at the time of the study and a sufficiently complicated industrial structure to be subjected to the type of analysis implied by the accounts. Although such analysis would be more appropriate for areas such as are included in "regional 701" studies than in "local 701" studies, even in the latter, studies of the local income stream in terms of such accounts as earnings from "export" sales, earnings from and payments for local services, state and Federal transfer and tax payments, and so forth, are worthy of serious consideration as a means of understanding and appraising the locality's economic structure.

A much more extensive set of studies in local economic accounting has recently been carried out by the National Planning Association.<sup>20</sup> Although

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<sup>19</sup> Leven, Charles L., Theory and Method of Income and Product Accounts for Metropolitan Areas, Including the Elgin-Dundee Area as a Case Study, Ames, Iowa, 1958. The Elgin Dundee Area is in Kane County, Illinois.

<sup>20</sup> Local Impact of Foreign Trade, A Study in Methods of Local Economic Accounting, National Planning Association, Washington, D. C., 1960. Three pilot community surveys were carried out for Gloversville, N. Y., Kalamazoo, Michigan, and Mobile, Ala.



these studies started out with the purpose of studying the impact of foreign trade on local communities and industries, they developed into a far more general study of local economic accounting. The analytical technique employed was "input-output analysis" (sometimes referred to as "interindustry relations analysis").<sup>21</sup> Very briefly, the central part of "input-output" analysis is a table or matrix displaying what each industry purchases from each supplier and what each industry supplies to each industry which purchases from it. Depending on the form used, this method of analysis attempts to show the impact on an area's level of economic activity of the location of a new industry in that area, the relation of the area to the "rest of the world" and the relationships which exist between areas.<sup>22</sup>

A large literature has developed on regional and interregional economic accounting and other types of regional analysis.<sup>23</sup> The active implementation of some aspects of these systems of analysis would require considerable investment of resources and Federal Government cooperation. The point, however, for this study is that opportunity for imaginative work at the regional and local level using some of these techniques would appear to be present particularly for such purposes as assessing impacts relating from external factors, studying interindustry relations and making projections of relevant economic activity. In fact, "interindustry relations analysis" has recently begun to make its appearance in "regional 701" studies outside of Pennsylvania. A very careful and detailed research report employing this method of analysis has recently been completed for the Lansing Tri-County Area under the "701 program."<sup>24</sup> It involved the participation of seven members of the Michigan State University faculty, eight research assistants, in addition to clerical staff and was carried out over a 17 month period. The study report states as its reason for selection of method that the research staff faced the problem "of choosing an analytical technique which would give the best possible information about the anatomy of the Tri-County Area and provide the best basis for estimating its growth possibilities."

Another useful type of analysis that would appear to be worthy of consideration for "701" economic surveys, particularly in those Pennsylvania communities which desire to attract new industries is the comparative cost study. Carefully prepared elements of production and transport costs which would be incurred by individual industries in the given community and others would seem to be among the most relevant types of data upon which locational decisions would be based. It is not meant to imply here that the economic

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<sup>21</sup> The NPA Study refers to the particular form of analysis used as "local impact analysis."

<sup>22</sup> See Charles M. Tiebout, "Interregional Input-Output Models: An Appraisal," Southern Economic Journal, Vol. 24, 1957, pp. 140-147.

<sup>23</sup> See particularly Walter Isard, Methods of Regional Analysis, John Wiley and Sons, New York, 1960.

<sup>24</sup> Economic and Population Base Study of the Lansing Tri-County Area, Bureau of Business and Economic Research, College of Business and Public Service, Michigan State University, East Lansing, Michigan, 1960. The Tri-County Area consists of Clinton, Eaton and Ingham Counties, Michigan.

survey should be a promotional or public relations document. On the contrary, it must be viewed as a planning tool. In this connection, well prepared comparative cost data should be of considerable assistance in deciding among alternate courses of action.

It bears repeating that this extremely attenuated discussion of techniques useful in urban economic analysis is, of course, not meant to imply that problems and limitations in their application are absent. On the contrary, some are plagued by theoretical problems, virtually all by serious difficulties of implementation with existing or readily obtainable data. However, a formal structure for thinking about a community or region's economy provides a meaningful framework for knowing what data to gather and for assessing the relevance of data.

The nature and content of an economic study will and should vary among communities and regions. What seems to be particularly needed are better presentations and analyses of data pointed more directly toward subsequent policies and decisions concerning such matters as land use, circulation and community development patterns. Furthermore, one time studies are obviously insufficient for meeting the broad needs and complex problems of metropolitan and other urban areas. Perloff recently commented as follows on this point and on the information needs for urban decision making, ". . . we must take the necessary steps from our present state of ad hoc studies carried out here and there into a situation where every major community will have an ongoing system to bring information to bear on current problems. The Pittsburgh Economic Study is currently addressing itself to this very issue, and a major result of its effort may well be the development of a permanent operation to provide economic intelligence for decision makers in the Pittsburgh region."<sup>25</sup>

There appeared to be a need in the "701" studies reviewed for a more careful and detailed specification of goals, both at the regional and community levels, in terms of long range economic objectives. Furthermore, there seemed to be a need for a thoughtful working out of the consistency of community and regional goals. On the matter of the types of descriptive and historical economic studies typically carried out in the Pennsylvania "701" reports mainly utilizing quite accessible secondary data, there is no denying that much of the information assembled was potentially useful. However, one was left with the feeling that often the data and analysis presented did not provide ultimate decision makers with the necessary knowledge and insights for assessing alternative means of fulfillment of goals and objectives.

Returning to a point made at the beginning, the scope of this study has necessarily been sharply delimited. Topics such as the relationship and integration of economic base studies with other studies included in the Comprehensive Plan, such as transportation, land use, population, and so forth, have remained virtually untouched. A number of ideas pertaining to Comprehensive or Master Plans, in general, should, however, not go unmentioned. To be at all effective, planning must be a continuous process. A program should be prepared and adopted for periodic review and appraisal of plans

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<sup>25</sup> Harvey S. Perloff, A National System of Metropolitan Information and Analysis, a paper delivered at a session of the annual meeting of the American Economic Association, December 27, 1961.

and appropriate provision should be made for necessary revision in the face of changing circumstances. It is axiomatic that the specific means of effectuating the Plan, complete with regulations, controls, capital budgets and priorities must all be worked out and incorporated into the planning procedure.

The ultimate evaluation of the "701" economic surveys will have to be made in terms of the extent to which they guide the relevant decision-makers into taking appropriate actions and prevent inappropriate actions. The record is clear on the fact that prior to the "701 program" many research projects of varying levels of quality were carried out as attempts to analyze community problems. In many of these cases, the problems remain unresolved. The same danger exists in the case of the "701 program." Obviously, there are vast, extremely complicated political, physical, economic and social factors and interrelationships involved in the working out of many of the problems.

The point of view this paper has attempted to express is that the more pertinent the data which are assembled and the more careful the economic analysis to which these data are subjected, the greater is the likelihood of guiding appropriate and effective action and of achieving successful solutions to existing and impending problems.



## APPENDIX

### List of "Local 701" Studies Reviewed

<u>Title</u>	<u>County</u>	<u>Community</u>
Long Range Development Plan	Allegheny	Oakmont
Long Range Development Plan	Allegheny	Cheswick, Harmar Township Springdale, Springdale Township
Preliminary Report on "Economy"	Allegheny	Hampton Township Shaler Township
Preliminary Report on "Economy"	Allegheny	Homestead, Munhall, West Homestead West Mifflin, Whitaker (Steel Valley)
Preliminary Planning Studies	Allegheny	Scott Township
A Master Plan	Allegheny	White Oak
Research and Surveys for the Comprehensive General Plan	Beaver	Midland
Preliminary Report Upon the Comprehensive Plan, "Prospective Land Use and Major Highways"	Cameron	Emporium
Research and Surveys for the Comprehensive General Plan	Crawford	Meadville
Comprehensive City Plan	Crawford	Titusville
Background Information, A Report on the Comprehensive General Plan	Dauphin	Middletown
Background Information, A Report on the Comprehensive General Plan	Dauphin	Steelton

# APPENDIX (Continued)

<u>Title</u>	<u>County</u>	<u>Community</u>
Research and Surveys for the Comprehensive General Plan, Report No. 1.	Erie	Fairview Township
Research and Surveys Report	Fayette	Brownsville
Research and Surveys Report	Fayette	Connelsville
Comprehensive Plan	Fayette	Uniontown
A Comprehensive Plan	Lancaster	Lititz
A Report Upon Community Growth	Lawrence	Ellwood City
Township Growth and Existing Conditions	Lawrence	Pulaski Township
Master Plan Report No. 2, "Population and Economic Base"	Luzerne	Nanticoke
Master Plan Report No. 3, "Population and Economic Base"	Luzerne	Pittston
Comprehensive General Plan	Mercer	Greenville
Planning Survey Report	Montgomery	Jenkintown
Economic Base Analysis	Montgomery	Pottstown
A Comprehensive Plan	Montgomery	Telford
Comprehensive Plan	Montgomery	Upper Merion Township
A Comprehensive Plan	Montgomery	Upper Providence Township

# APPENDIX (Continued)

<u>Title</u>	<u>County</u>	<u>Community</u>
Danville Master Plan	Montour	Danville
A New Approach to Pottsville's Future	Schuylkill	Pottsville
Survey for Planning	Schuylkill	Schuylkill Haven
Comprehensive Plan	Somerset	Windber
Research and Surveys for the Comprehensive General Plan	Venango	Franklin
A Report on the Comprehensive General Plan, "Background Information"	Washington	Burgettstown
Information Report 8, "Economic Base"	Westmoreland	Greensburg, Hempfield Township S. Greensburg, S. W. Greensburg
Report Upon the Long Range Guiding Plans and Criteria	Westmoreland	Moneessen
Master Plan	Westmoreland	North Huntingdon Township



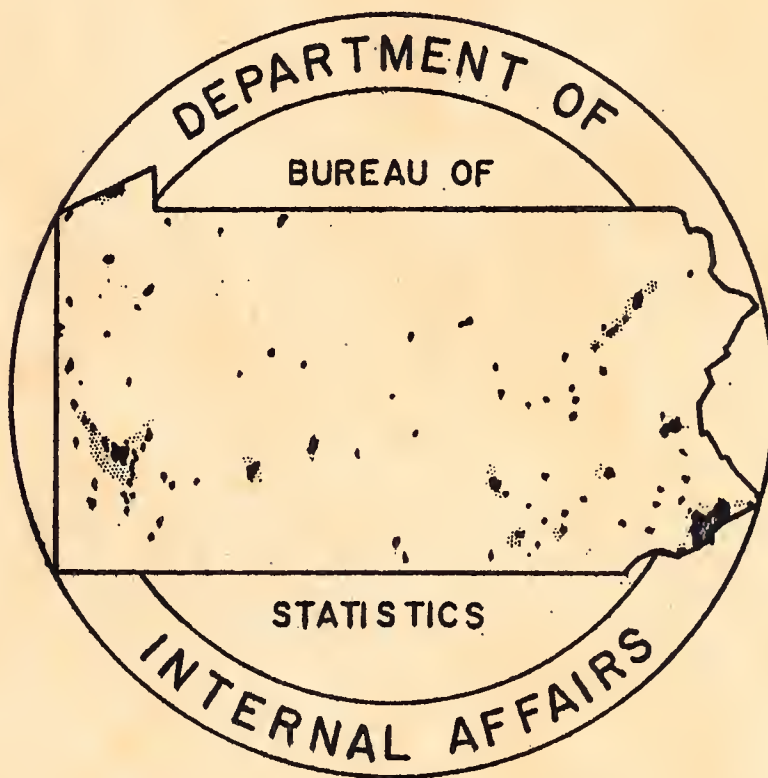


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# **AN EVALUATION OF SELECTED DATA REQUIREMENTS AND AVAILABILITY FOR URBAN ECONOMIC PLANNING AND DEVELOPMENT IN PENNSYLVANIA**

By

**Morris Hamburg and John H. Norton  
Wharton School of Finance and Commerce  
University of Pennsylvania**



**DEPARTMENT OF INTERNAL AFFAIRS  
GENEVIEVE BLATT, SECRETARY**

**DECEMBER 1963**

RELEASE NO. S-11b

DOCUMENTS SECTION

1. The first part of the paper discusses the importance of the study of the history of the United States. It is argued that a knowledge of the past is essential for a full understanding of the present and for the development of a sound policy for the future.

2. The second part of the paper discusses the importance of the study of the history of the United States. It is argued that a knowledge of the past is essential for a full understanding of the present and for the development of a sound policy for the future.

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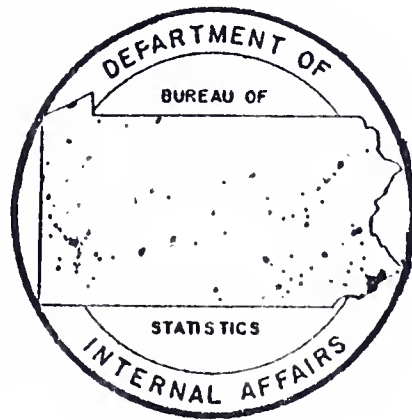
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Commonwealth of Pennsylvania  
DEPARTMENT OF INTERNAL AFFAIRS  
Genevieve Blatt, Secretary

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Bureau of Statistics

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December 1963

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#### A. CHARGE PUBLICATIONS

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There are 269 tables and 50 graphs and map diagrams, 293 pages. Price \$1.50 plus 8¢ state sales tax. (Copies of the 1958, 1959, 1960, and 1961 Pennsylvania Statistical Abstracts are still available at a price of \$1.00 plus 5¢ state sales tax for the 1958 edition and \$1.50 plus 8¢ state sales tax for the 1959, 1960, and 1961 editions.)

##### 2. THE 1962 INDUSTRIAL DIRECTORY OF THE COMMONWEALTH OF PENNSYLVANIA (16th Edition)

Published every three years with supplements for the two years between Directories. County Section - The names of all manufacturing establishments in each county are listed alphabetically within four-digit Standard Industrial Classifications (Revised SIC). The following information is shown for each establishment: plant location, office mailing address (if different than plant location), and number of employees. Industry Section - This section includes an alphabetical listing of all establishments within four-digit industrial classifications. The county location and the office mailing address is shown for each establishment. 481 pages. Price \$7.50 plus 38¢ state sales tax.

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Contains the names, addresses, dates of incorporation, and dates and amounts of bond issues for all municipal authorities in Pennsylvania. (1962 edition) Price \$1.00 plus 5¢ state sales tax.

##### 4. POPULATION AND AREA OF MUNICIPALITIES IN PENNSYLVANIA (5-9)

County map diagrams showing municipalities with area in square miles and 1950 and 1960 Census population figures. Ward population figures are given for Philadelphia, Pittsburgh, Erie, and Scranton. 70 pages. Price \$1.00 plus 5¢ state sales tax.

#### B. FREE PUBLICATIONS

##### 5. MANUFACTURING STATISTICS

(Based on the annual Pennsylvania Industrial Census.)

M-1 1962 Statistics for Manufacturing Industries in Pennsylvania (also, 1958, 1960 and 1961)  
M-2 1962 Statistics By Major Industry Group for Counties and Urban Places (also 1957)  
M-3 1962 Statistics for Urbanized Areas (also 1956 to 1960)  
M-4 1962 General Statistics By Industry and By Size of Establishment (also 1957 to 1960)  
M-5 (MC-62) 1962 County Industry Reports (Separate report for each county; includes data for political sub-divisions covering 1962 manufacturing statistics for individual industries.) - also 1961  
M-6 (FT-61) Exports By Pennsylvania Manufacturing Companies: 1961 (also 1960)  
M-7 Directory of Pennsylvania Manufacturing Exporters; 1963  
This directory is an alphabetical listing of all Pennsylvania manufacturing establishments exporting in 1961, their addresses, and a listing of products exported by each -- also lists all exporting establishments under each manufactured product exported.

##### 6. PUBLIC UTILITY STATISTICS

(Based on the annual Census of Public Utilities in Pennsylvania)

U-1 Statistics for Electric Utilities in Pennsylvania, 1962 (also 1956 to 1960)  
U-2 Statistics for Gas Utilities in Pennsylvania, 1962 (also 1956 to 1961)  
U-3 Statistics for Telephone Utilities in Pennsylvania, 1962 (also 1956 to 1961)  
U-4 Statistics for Water Utilities including Water Authorities in Pennsylvania, 1962 (also 1956 to 1961)  
U-5 Statistics for Sewer Authorities in Pennsylvania, 1962 (also 1956 to 1961)  
U-6 Statistics for Motor Bus and Electric Transportation Companies in Pennsylvania, 1962 (also 1956 and 1958 to 1960)

##### 7. MUNICIPAL AUTHORITY STATISTICS

A-1 1957 Statistics for Municipal Authorities  
A-1 1958 Statistics for Municipal Authorities  
A-59 1959 Statistics for Municipal Authorities  
A-62 1962 Statistics for Municipal Authorities

##### 8. INCOME STATISTICS

I-1 Pennsylvania's Personal Income by Type and County for Selected Years, 1929-1960

##### 9. SPECIAL RELEASES

S-2 Industrial Statistics for Pennsylvania, 1951 to 1955  
S-5 Mineral Statistics for Pennsylvania, 1957  
S-7 Mineral Statistics for Pennsylvania, 1958-1959  
S-8 Re-apportionment in Pennsylvania  
S-10 Employment Statistics in Pennsylvania for Selected Years: 1919 to 1961  
S-11a Economic Base Studies for Urban Planning and Development in Pennsylvania (A description and evaluation of such studies in Pennsylvania--by Morris Hamburg, University of Pennsylvania)  
S-11b An Evaluation of Selected Data Requirements and Availability for Urban Economic Planning and Development in Pennsylvania -- by Morris Hamburg and John H. Norton, University of Pennsylvania

S-12(LFC) County Labor Force Report - These reports contain information on employable age population, labor force, unemployment, occupations, and industrial attachment for the cities, boroughs, and townships in fifty-one (51) counties. The data in these reports are not available from any other source. Not included are the following counties for which similar information is available in the Census Tract publications of the U. S. Bureau of the Census: Allegheny, Beaver, Berks, Bucks, Chester, Cumberland, Dauphin, Delaware, Erie, Lancaster, Lehigh, Luzerne, Montgomery, Philadelphia, Washington, and Westmoreland.

#### C. OUT OF PRINT PUBLICATIONS

These out-of-print publications are listed because copies of many of these reports are available for reference in public, university, and college libraries.

Pennsylvania Productive Industries - These publications include information on manufacturing, public utilities, and mineral industries for the years 1916 to 1950.  
Directory of Pennsylvania Manufacturing Exporters: 1960 Supplement No. 1 to the 1962 Industrial Directory of the Commonwealth of Pennsylvania  
Index of Statistical Sources for Pennsylvania (Editions in 1955, 1957, 1959, 1960, and 1961)  
P-1 County and City Population Estimates for Pennsylvania  
P-2 County Population Estimates for Penna. by Age and Sex  
P-3 County Population Estimates -- Notes on Methodology  
P-4 Local Population Estimates in Pennsylvania  
S-1 Leading Manufacturing Counties in Pennsylvania  
S-3 Industrial Statistics for Pennsylvania, 1916 to 1956  
S-4 Capital Investment for Manufacturing and Mining Industries in Pennsylvania, 1956  
S-6 Manufacturing Employment in Urban, Suburban, and Rural Places in Pennsylvania, 1960  
56-5 Shifts in the Geographic Location of Pennsylvania Industry, 1920-1955  
57-3 Industry Change in Pennsylvania, 1954-1955

## PREFACE

The future economic growth and industrial development of Pennsylvania largely depends upon the metropolitan areas. If the metropolitan areas grow and prosper, so will the State. It is not only the industries in the metropolitan areas, but also the transportation and communications, and the commerce and services centered in these areas that nurture the growth and development of other areas of the State. Most important of all, it is the institutions of higher learning and research and development activities, which depend on institutions of higher learning for technical and professional support, that often provide the spark for the development of new and the expansion of old industries.

Economic planning is an essential element in orderly metropolitan area growth. Such planning requires economic data about the past and present and prospects for the future. This report by Dr. Morris Hamburg and John H. Norton of the Wharton School of Finance and Commerce, University of Pennsylvania, evaluates data requirements and availability in three important areas of information: population, employment, and personal income.

This is the second of three reports being prepared by Dr. Morris Hamburg under a contract with the Department of Internal Affairs. The first report, "Economic Base Studies for Urban Planning and Development in Pennsylvania", was published in 1962. The third and final report will deal with methods of analysis in urban economic planning and development. Present methods and practices will be discussed and recommendations made for improvement.

A handwritten signature in dark ink, reading "Genevieve Blatt". The signature is fluid and cursive, with a long horizontal stroke at the end.

Genevieve Blatt  
Secretary of Internal Affairs



## FOREWORD

This is the second monograph in a project representing a study of data requirements and methods of analysis for metropolitan economic planning and development in Pennsylvania. The first paper presented a description and evaluation of economic surveys carried out in Pennsylvania under the Urban Planning Assistance Program ("701 program") of the Federal Housing and Home Finance Agency.<sup>1</sup>

The present monograph is an evaluative report on selected regional and local area data requirements and availability for economic studies in urban planning and development in Pennsylvania. Attention is centered upon three critical categories of information: population, employment and personal income. Recommendations have been presented concerning improvements and changes in these data in the individual sections devoted to them.

The authors interviewed and received assistance and guidance from scores of government officials, planning personnel and academic researchers in the course of this study. The list of persons who rendered this aid is so long that no attempt is made here to give individual citations. Our sincere appreciation, however, is expressed to all of them, and it is perfectly clear that sins of omission and commission are solely those of the authors. We are especially indebted to our Wharton School colleagues, Professors Wroe Alderson and Stanley Shapiro. During their study of the feasibility of a metropolitan area data service for the Pennsylvania-New Jersey-Delaware-Metropolitan Project, Inc., they generously made their interviewers available to us for the purpose of obtaining information which was of joint use to our two studies. Thomas W. Langford, Jr., a graduate student at the Wharton School, was of particular help in this connection; our gratitude is expressed to him also for research assistance in this study.

It is especially gratifying to express once again our thanks to the Department of Internal Affairs for its financial support of this project and its patient and understanding forbearance during the time consuming period of this research. Our debt is particularly heavy to Emmett Welch, present Director of the Bureau of Statistics of that Department for his many substantive contributions, knowledgeable critique and encouragement of our work. Kenneth Masters, Director of the Bureau of Statistics at the inception of this study, also was extremely helpful during the initial phases of the work.

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<sup>1</sup>Hamburg, M., Economic Base Studies for Urban Planning and Development in Pennsylvania, Department of Internal Affairs, Commonwealth of Pennsylvania, April, 1962.

Lastly, we wish to state our gratitude to Mrs. Sylvia Balis for her loyal, efficient and intelligent assistance in the typing and editorial chores. Her contributions far exceeded those called for by duty, responsibility or remuneration.

December 1963

MORRIS HAMBURG and JOHN H. NORTON  
Wharton School of Finance and Commerce  
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## TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
Introduction .....	1
Recommendation .....	7
1. Population Statistics .....	8
Requirements for Data .....	8
Past Trends and Current Status of Population .....	11
Levels and Rates of Change of Total Population .....	14
Component Rates of Population Change .....	15
Composition and Characteristics of Population .....	17
Spatial Distribution of Population .....	17
Comparisons with Other Geographic Units .....	18
Characteristics of the Migrant Population .....	19
Population Projections and Forecasts .....	19
Small Area Data Needs .....	23
Nature of Available Data .....	25
Levels and Rates of Change of Total Population .....	27
Component Rates of Population Change .....	29
Composition and Characteristics of Population .....	37
Spatial Distribution of Population .....	37
Comparisons with Other Geographic Units .....	38
Characteristics of the Migrant Population .....	39
Current Population Estimation .....	40
Population Projections and Forecasts .....	49
Evaluation of Data Requirements versus Availability .....	52
Levels and Rates of Change of Total Population .....	52
Component Rates of Population Change .....	53
Composition and Characteristics of Population .....	55
Spatial Distribution of the Population and	
Comparisons with Other Geographic Units .....	56
Characteristics of the Migrant Population .....	57
Current Population Estimation and Population	
Projections .....	58
Recommendations .....	62
2. Labor Force, Employment and Unemployment Statistics ....	64
Uses of Labor Statistics .....	66
Requirements for Data .....	70



<u>Section</u>	<u>Page</u>
Employment Data Needs for a Typical Base Study . . . .	70
Planning for Full Employment . . . . .	72
Area Classification Problems . . . . .	77
Labor Mobility . . . . .	78
Special Problems in Measuring Unemployment . . . . .	79
The Need for Consistency in Data . . . . .	82
Forecasting Employment and Unemployment . . . . .	85
Nature and Quality of Available Data . . . . .	99
Types of Data Sources . . . . .	99
Data for Base Studies: Industry Employment . . . . .	99
Data for Employment Planning and Analyses . . . . .	110
Labor Mobility Data . . . . .	115
Unemployment Data . . . . .	116
Data for Forecasting and Other Purposes . . . . .	118
Problems in the Evaluation and Use of Labor Statistics . . .	119
Economic Base and Industry Studies . . . . .	120
Employment and Unemployment Analyses . . . . .	125
Other Uses of Labor Statistics . . . . .	130
Recommendations . . . . .	132
Preliminary Considerations . . . . .	132
Recommendations . . . . .	134
3. Personal Income Statistics . . . . .	137
Requirements for Data . . . . .	137
Personal Income Projections and Forecasts . . . . .	146
Nature of Available Data . . . . .	149
Evaluation of Data Requirements versus Availability . . . . .	157
Recommendations . . . . .	160



# AN EVALUATION OF SELECTED DATA REQUIREMENTS AND AVAILABILITY FOR URBAN ECONOMIC PLANNING AND DEVELOPMENT IN PENNSYLVANIA

## INTRODUCTION

In the first monograph of this series, a description and appraisal was presented of "economic base studies" recently carried out in Pennsylvania under urban planning grants ("701 program"). These studies were one component of Comprehensive or Master Plans prepared by local or regional areas; other studies contemplated in the "701 program" include examinations of topics such as land use, traffic, transportation, housing conditions, community facilities, programming of capital improvements, long range financial plans and other planning activities. The quantity of information required for a metropolitan or urban area to carry out careful continuing studies on these matters is staggering. Numerous systems have recently been proposed for the provision of required information for regional or urban economies. One such system, for example, is Werner Hirsch's "regional interaction model"<sup>1</sup> which is essentially an input-output flow table. He also specifies a need for an integrated three-level flow system of national, regional and intraregional accounts. One investigator, Meridith B. Givens, states that even this, however, is but a necessary first step and by no means a satisfactory overall frame-work for urban or regional economic data requirements. He points out that, "In urban and regional analyses, many types of relationships or transactions are needed for various analyses. Transactions of spending and saving, wealth gathering and transfer, and implicit nonmonetary transfers may be required for specific purposes. They probably can be included in some generalized social accounting system, but not in a standard input-output table that emphasizes the production relationships... Moreover it should be noted that Hirsch believes the information system 'should provide easy and universal access to a virtually complete file of data,' and has already identified 103 pieces of information to be collected on each person, plus 35 on streets and roads, and 90 on real estate. On the person data alone, for a metropolitan area of ten million persons that is more than one billion bits of information."<sup>2</sup>

The goal of this study is a more modest one than is implied by Hirsch's system of metropolitan information or by alternative groups or individuals who have proposed other omnibus urban statistical collection systems or data centers. This study is delimited to a study of selected data requirements and availability for economic studies in urban planning and development in Pennsylvania. It is focused particularly on an attempt to be helpful to the Commonwealth of Pennsylvania in understanding the nature of some of these requirements and to specify and assess some of the gaps that exist between needs and the stock of current data. Attention is centered upon three major cate-

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<sup>1</sup>Hirsch, Werner Z., "A General Structure for Regional Economic Analysis," Design of Regional Accounts, Johns Hopkins Press, Baltimore, Md., 1961.

<sup>2</sup>Givens, Meridith B., "Discussion of Systems of Accounts for Urban Regions," American Economic Review, Vol. LII, No. 2, May 1962, page 384.



gories of information, population, employment and personal income. The importance and uses of these types of data in urban planning and development are treated in the sections devoted to these categories.

Although this study does not attempt to discuss the subject of comprehensive metropolitan region information requirements or the nature and organization of area data centers for meeting these requirements, some mention of recent activities in these areas is pertinent background. Harvey S. Perloff of Resources for the Future, Inc., has recommended a national system of urban information provision which would involve contributions from federal, state, and local agencies.<sup>1</sup> He visualizes metropolitan regional information requirements under four headings: (1) metering, regional accounts, and reporting, (2) growth projections, (3) impact or interaction analysis, and (4) specific project analysis.

Under (1), Perloff is thinking of sets of regional accounts along the lines of the national economic accounts to be provided on a comprehensive and regular basis. There would be systematic record keeping on asset and flow accounts and perpetual inventories would be maintained on people and property. Metropolises would develop "state of the region" reports analyzing pertinent data in an analogous fashion to the President's annual "state of the union" message. The State Planning Board in Pennsylvania has recently undertaken the design of an economic study for Pennsylvania, in which it will be recommended that sets of regional accounts be prepared for different regions of the State.

Under (2), growth projections, it is suggested that specific industry studies are needed particularly of the "evolving locational requirements of the various major industrial groups and the relative advantages of the different regions to meet these requirements." Migration patterns, jobs, income, value added and so forth would be scrutinized.

Under (3), impact or interaction analysis, effects upon communities of changes at higher levels such as the national one, for example, the effect of changing industrial structure on employment stability and on land requirements for housing and industry, would be studied.

Under (4), Perloff has in mind the analysis of broad policy alternatives and specific programs through comparative analysis of costs and benefits. He suggests that many urban redevelopment and similar projects would not have been carried out if suitable analysis had been made of effects on the supply of housing, transportation requirements and long-run costs to the community.

Considerable attention has been given in the past few years throughout the country to the need for metropolitan area data services. Probably the most comprehensive study of the feasibility of such an area data service has been recently carried out by a research team under the direction of Professors Wroe Alerson and Stanley Shapiro of the Wharton School, University of Pennsylvania, and financed by the Pennsylvania-New Jersey-Delaware Metropolitan Project, Inc., (Penjerdel). The study presents five different concepts for the organization of a metropolitan regional data service pointing out that each of the alternatives has sincere advocates who feel that the approach they favor

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<sup>1</sup>Perloff, Harvey S., "A National System of Metropolitan Information and Analysis," American Economic Review, Vol. LII, No. 2, May, 1962.

would be most universally useful. The first approach is that of a workshop for collecting and processing data for general utilization. Each of the other four approaches would be in addition to the first or data workshop approach, i.e., the workshop would be the foundation of the data center. The data utilization center would

"(1) collect, collate and edit available regional economic and social data, checking for errors or omissions and filling in gaps through such means as statistical estimation.

(2) Consult with firms or agencies which originate data, with the aim of extending the range of statistical series covered and conforming these data to a consistent format for the region as a whole, standardizing definitions and areal units.

(3) Publish summaries of the data available in a form that will encourage broader interest and understanding of the resources available and to assist individual users in drawing upon these resources."

The second approach is in terms of a land parcel-real property inventory. In this system punch cards would be maintained on every parcel of land in an area and on the people living and working on these parcels. The parcels would be identified by numerical code locations; the cards would have information on such items as the nature and use of the land and pertinent information on improvements. Population and economic data would be obtained through sample and census surveys.

Whereas this second approach is particularly useful for local planning activities, the other three are oriented toward regional planning. The third approach is for a data center organized on a "location and traffic model." Under this form of organization, data needs would primarily be in terms of movements of goods and people among locations and in the shifts in the locations themselves. Various reporting services would have to be reorganized and new ones instituted to obtain the basic data on industrial movements, population movements and family travel patterns.

The fourth approach is in terms of a data service which would prepare sets of regional accounts, recommended by the Wharton research team for completion at three year intervals. Income and product accounts for the metropolitan region would be developed analogous to the national economic accounts. These accounts could be defined for various levels of geographic aggregation. The essential advantages of this method of data collection are the logical framework of analysis used, the internal consistencies of data generated by the system, and the fact that much of the needed data for planning purposes can be visualized as being produced within the system.

The fifth approach, termed the capital expenditure evaluation model, assumes a metropolitan regional planning authority for its effective implementation. This model, proposed to the Wharton team by Dr. Jack U. Mowll centers on the problem of the planning of basic utility services for the metropolitan region. The data service would have as a primary function the evaluation of proposed capital improvements on a cost and benefits basis. The data required for such evaluation are visualized as stemming from determinations of regional requirements for space, regional economic capabilities



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(from regional social accounts analysis and various projections) and utility requirements relative to land uses. Under this concept of the data service, it would concentrate primarily on the building of the appropriate model and on the provision of data required by the model.

It should be strongly emphasized that the authors of this study agree with the concept that there is a need and a logical justification for the organization of data services on a metropolitan regional basis. At least a couple of groups in Pennsylvania have addressed themselves to large scale data collection and analysis programs on such a basis. The Pittsburgh Economic Study under the guidance of Edgar M. Hoover has been engaged in the development of a permanent organization for the provision of economic information on a continuing basis for the Pittsburgh region. The Penn Jersey Transportation Study in Philadelphia has carried out a massive data collection and analysis program for the Philadelphia metropolitan region extending into the neighboring States of New Jersey and Delaware. It is not within the scope or resources of this study to treat the subject of how a coordinated system of regional economic information data centers might be organized in Pennsylvania, but clearly serious study of this question should be carried out at the State level. There are important problems involving interstate relationships which would have to be resolved. For example, the Philadelphia metropolitan region spills over into New Jersey. State planning officials in New Jersey in considering planning and development problems of some of their northern counties inevitably must coordinate with the New York metropolitan region. An awareness soon develops of a need for a systematization of data collection methods, definitions, units and so forth among the various metropolitan regions as well as for intra-metropolitan standardization.

A few other information systems which have been developed for planning purposes warrant mention. A study has been carried out by faculty members of the George Washington University on the devising of an information system for a suburban planning agency, the Maryland-National Capital Park Planning Commission.<sup>1</sup> The system provides for the availability of numerical information on three decks of punched cards, (1) a "land use" deck, which constitutes the "universe" of numerical information, (2) a "family characteristics deck," which is a sample of the land use deck and (3), an "employment characteristics" deck which is also a sample based on the land use deck. An attempt would be made to have in the land use deck almost total information on the use, size, location and value of every parcel of land in the planning area. Family and employment characteristics would be determined from personal interviews of periodic samples of families and employers derived from the basic "population" of data cards.

Other parcel data systems for metropolitan areas include the Real Property Inventory of Metropolitan Cleveland and the modified parcel level system of data collection employed by the Penn Jersey Transportation Study. Ideally, such small area data systems could be utilized for the construction of social, economic and physical aggregates for larger areas, including entire metropolitan regions.

An intriguing recent innovation in urban planning procedures has been

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<sup>1</sup>Campbell, R. D. and LeBlanc, H. L., An Information System for Urban Planning, The Urban Planning Data Systems Project, The George Washington University, Washington, D. C., 1962.



proposed for the City of Los Angeles by Stanford L. Optner and Associates.<sup>1</sup> Optner has recommended the development of electronic data processing systems and the accompanying construction of computer simulation models for the analysis and solution of city planning problems. Essentially, the ultimate goal is the automation of all of the master plan elements into a total system so that, through simulation techniques, the effects of policy decisions may be evaluated.<sup>2</sup> The system presupposes an automated land use and zoning inventory, a common statistical unit agreed upon by the various agencies concerned, standard land use classification codes, and the existence of residential, commercial and industrial standards. The Department of City Planning of Los Angeles is currently attempting to close the gap between the present status of its program and a complete implementation of the electronic data processing program.

Returning now to the relatively modest dimensions of the present study, attention is focused here upon certain rather specific categories of data requirements and availability for economic studies carried out in connection with planning and development activities in metropolitan areas or local communities within these areas. The subjects of population; employment, labor force, and unemployment; and personal income statistics have been singled out because of their importance in the study of the economic structure and potential of an area. Although the need for and importance of these types of data in the above context are more fully specified in the individual chapters, a brief and rather general statement will be given at this point.

Economic planning for urban areas consists of decision processes and activities aimed toward the achievement of economic goals in the future. Planning and decision-making are intertwined in this process of seeking out optimum allocations of human and physical resources while taking account of the desires, choices and aspirations of the people for whom the planning is being carried out. In the economist's terminology, such activities may be thought of as attempts to maximize the welfare of the population of an area through judicious manipulation and allocation of the available resources. Plans utilized in the development of an area contemplate the use of tools such as capital and operating expenditures budgets, regulations and programs of legislation. The use of these tools implies large numbers of decisions concerning the allotment and distribution of the above-mentioned resources.

In assessing past trends and current status and attempting to project the future economic dimensions of a metropolitan area, comprehensive measures of economic activity are essential. Information is needed on the people who have lived, currently live or will live, in the planning area, their total numbers, characteristics and composition, their mobility and spatial distribution. The economic growth potential of an area is a direct function of the human resource material dwelling in the area. From the planning viewpoint, detailed knowledge of the above factors is essential for the determination of space needs and for their distribution among industrial, commercial and residential categories. Schools, public utilities, shopping centers and so forth must all be planned for people; the timing and characteristics of devel-

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<sup>1</sup>Report on the Feasibility of Electronic Data Processing in City Planning to the Department of City Planning, City of Los Angeles, Stanford L. Optner and Associates, 1959.

<sup>2</sup>Letter from John E. Roberts, Director of Planning, City of Los Angeles, November 15, 1962.

opment require detailed information on who these people will be, where they will be located within the planning area and their characteristics and composition. A host of capital investment decisions and locational choices of public and semi-public facilities stemming from planning and development activities rely upon this type of information about the people who inhabit an area.

The growth or decline in the population of a region or community is to a substantial degree related to the employment opportunities which are present in the area. People tend to move toward areas which have jobs to offer and away from communities in which employment opportunities are lacking. There is thus a continual interaction between population and economic activity as indicated by employment. Labor force information is essential in the planning process since from the activities of this segment of the population arise much of the commodities and services which are available to the area. Levels of living that can be sustained by the community are related to the numbers and quality of the labor force and the relative numbers in this group compared to the numbers supported by its economic activities. To a considerable degree, the occupational and industrial composition of the labor force will determine the economic future of an area. Employment is, of course, a very widely used index of overall economic activity. The relative size of the labor force to total population can be an extremely telling indicator of the general economic well-being of a community. An important specific use of employment information in planning is as a measuring rod for the determination of land requirements for industrial and commercial areas.

The third category of information, namely, income, is particularly useful in planning and development work as a general measure of overall economic activity and economic growth. There is considerable agreement among economists at the present time on the use of real income per capita (or per member of the labor force, or some other suitable denominator) as the most pertinent single index for gauging economic growth. Income data are particularly useful in appraising the performance and in analyzing the structure and behavior of the economy of the planning area. At the national level, the most comprehensive measure of the productive efforts of the population is "gross national product." At the present time there exists no such measure for metropolitan regional or local areas. A frequently used proxy measure for such areas is "personal income," a statistic which depicts income flows to individuals from all sources. When available, such data are extremely useful in depicting the overall economic development of an area, indicating not only the net effect of industrial activities, but also of all other activities performed for personal remuneration.

Reference was previously made to the idea of the establishment of regional data centers to provide required information flows for urban areas. Such systems could potentially provide much of the required information for regional and local policy-formation and decision making. In the absence of such data centers at the present time, however, interim studies such as this one can perhaps be useful in pointing out certain areas of data problems and possible data improvements for economic studies carried out in connection with the planning and development of urban areas.

The discussion in this paper is organized into three sections dealing with the aforementioned categories of data, (1) population, (2) employment, labor force, and unemployment, and (3) personal income. Under each section



data requirements, availability, and evaluation of availability versus requirements and recommendations are given.

### Recommendation

When the data requirements for urban economic planning and development in Pennsylvania are studied, the need becomes apparent for a coordinated system of statistical intelligence at the State level for these purposes. A wide variety of interrelated data are needed for planning; this information is generated by a number of State departments and agencies, as well as by federal and local organizations. Since urban planning and development represents only one area of use of State statistics, it appears appropriate at this point to proceed somewhat beyond the bounds of the subject area of this report in making suggestions pointed toward the implementation of the desired coordination of statistical information. This coordination might be provided by an Office of Statistical Standards which would perform functions similar to those of the federal office of that name. Such an office could aid considerably in the improvement of statistical information for urban planning and development purposes but perhaps more importantly for a host of other uses as well. The need for the performance of these functions at the State level has been recognized at earlier times but implementation has not been effected.

In connection with this suggestion of a Pennsylvania Office of Statistical Standards, it might be pointed out that the present federal pattern of centralized supervision and continuous reappraisal of the statistical information program was arrived at only after years of experimentation with various organizational and functional structures. Because of differences between the State and federal governments in the scope and nature of statistics and in the organizations collecting and analyzing them, it is probable that the federal pattern might have to be considerably modified for State application.

There is a serious need at the State level for comprehensive and coordinated research, estimates and projections. One possible method of accomplishing this coordination might be through the establishment of a unit such as the suggested Office of Statistical Standards in a State department or agency. However or wherever the unit is established it would be absolutely essential that adequate financial support be given to it.

The following recommendation is offered for consideration by the appropriate Commonwealth authorities:

It is recommended that the Commonwealth of Pennsylvania resume and intensify its study of the need for the coordination and unification of a system of statistical information for Pennsylvania. In view of the complexity of obtaining coordination of all statistical activities, the initial study might be restricted to the areas of population and labor statistics.



## 1. POPULATION STATISTICS

### Requirements for Data

Careful analyses of past trends, current and future status of the population of urban areas are an essential component of economic base studies in the planning and development of these areas. The nature, amount, quality, and location of public and semi-public facilities and services required by a community is directly related to the size, geographical distribution, the racial, ethnic, age and other characteristics of the people who inhabit it. Metropolitan area, county, and municipal planning activities are particularly concerned with the use of land for industrial, commercial, residential, recreation and other purposes. Utilities, roads and transit lines, housing, shopping centers, schools and recreation areas all exist to serve the needs of people who live in a community. Obviously, the numbers of these people and their characteristics are a basic determinant of what these facilities and amenities have been, are, and should become. Plans and programs for the development of a community involve substantial commitments of its financial and other resources. Over or under estimation of the potential dimensions and needs of an urban area can lead to quite serious consequences; at the very least, such errors lead to inefficiencies in the utilization of the resources of the area. Thorough analyses of the population and its characteristics are necessary, therefore, for rational planning, policy-making and decision-making in municipalities, counties, metropolitan regions and similar areas.

It is not meant to imply by the above discussion, however, that population is to be construed as an independent variable solely determining the types and amounts of development of an area. As a matter of fact, for geographic areas such as metropolitan regions and municipalities, population size and the type of population are heavily dependent upon economic factors. Business and job opportunities in a given area will attract migrants from other areas where these opportunities are lacking. The in-migrants may find employment primarily in the central city portions of metropolitan areas, and may settle in residences in suburban areas and outlying communities in the metropolitan area. In Pennsylvania, in recent years, there has been a pattern of net in-migration into the suburban fringes of metropolitan areas from central cities and an out-migration from areas of unemployment, particularly from coal-mining communities and areas concentrated in the maintenance and repair of railroad equipment.

There is, therefore, a clear interdependence between levels and types of economic activity and the populations in the areas where these economic activities take place. As was pointed out in one of the studies of the New York Metropolitan Region,<sup>1</sup> growths in the demand for the output of an area give rise to growth in the labor force required; if this latter growth does not take place out of increased labor force participation and natural increase of the local population, a net in-migration from other areas will occur. Therefore, assuming the population of an area to be a variable which primarily depends upon the demand for the products produced by

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<sup>1</sup>Berman, Barbara R., Benjamin Chinitz and Edgar M. Hoover, Projection of a Metropolis, Technical Supplement to the New York Metropolitan Regional Study, Harvard University Press, Cambridge, Mass., 1961.

that area, the New York Metropolitan Regional Study determined population projections "simultaneously, in consistency with all of the other variables." At the very least, the implications of the above remarks for economic base studies carried out in urban areas is that studies of the economic potentials of the area should be developed in tandem with population studies. The studies should be inter-related and should be carefully checked for mutual consistency.

The use of population studies in connection with land use planning was emphasized above. F. Stuart Chapin has given a succinct summary of this use of population information. He refers to methods of gauging the growth potential of an urban areas and goes on to say,

"But to be entirely useful in planning analyses, this growth potential must be expressed in terms of the population it can be expected to sustain - the size of population, its composition and characteristics, and its spatial distribution. Population size gives an indication of the overall dimensions of the physical environment and supplies a basic yardstick for the estimation of space needs for various categories of land use. When the time element is introduced and future trends in population size are estimated, these trends become the basis for estimating future dimensions and future space needs. Investigations of population composition extend these analyses to such qualitative considerations as age groups, household sizes, and income composition of the population. Thus studies of population composition assist in estimating residential space requirements for various dwelling types consistent with existing and anticipated family sizes, income levels, and the needs of each segment of the life cycle. They assist in determining the amount of space needed for recreation areas, schools, and other community facilities for all segments of the population - small children, teen-agers, families, and old people. Finally, investigations of population distribution provide clues as to how these various land uses and facilities should be located in the urban area. Thus, population studies not only provide a means of scaling total space needs for selected land use categories at different periods of time in the future, but also give an indication as to how these total space needs should be allocated to different parts of the urban area at any particular time."<sup>1</sup>

Small area population data are particularly required for a large variety of planning purposes. For urban redevelopment, renewal, rehabilitation and conservation work, detailed studies of specific communities and neighborhoods must be made. Frequently for these and other planning purposes, U. S. Census data for housing and population on a block-by-block or census tract basis are needed. Population data for small areas are also required for the planning of transportation systems, the planning of residential areas within the city and other political jurisdictions and for community development planning including the planning and programming of community facilities and services. The latter purposes include planning for educational institutions, hospitals, water, sewage, fire, police and similar services.

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<sup>1</sup>F. Stuart Chapin, Urban Land Use Planning, Harper and Bros., New York, 1957.



To be somewhat more specific about such uses, for example, in a transportation study, land use may be studied by analyzing the most recent population and housing data by census tracts. Then, by combining this information with appropriate survey data, traffic generating quantities may be projected to forecast traffic volumes over the region of interest.

Although the subject of migration may certainly be subsumed under the general headings of population size, composition and distribution earlier discussed, a brief special mention of the importance of migration data in planning and development activity is warranted. In recent years, the mobility of our population has been spectacular. There has been a general pattern of population movement from rural to metropolitan areas and from central cities to suburbs. In many communities these shifts have altered radically the general socioeconomic and demographic characteristics of the resident populations. Many factors may be cited as reasons for these population movements. Prominent among the reasons are economic motivations related to job opportunities and aspirations for higher modes of living in the communities to which people have moved. Whatever the reasons for migration, however, the impact of these changes in population characteristics on planning processes has been tremendous. Changes in numbers and proportions of school age children or elderly persons, in patterns of racial and ethnic segregation or distribution and the like have far-reaching implications for the provision of public services and amenities for the community. Detailed and timely data on population mobility are essential to planners who are trying to understand and plan for dynamic communities and regions.

An attempt will be made in this section to sketch in some population data requirements for the specific purpose of inclusion of such data in economic base studies as part of Master Plans or Comprehensive Plans drawn up for the planning and development of urban areas. Because of the nature of such base studies and because this project is particularly oriented toward an attempt to improve the Commonwealth of Pennsylvania's statistical program, major emphasis will be upon metropolitan area, county and municipal data. After the main discussion of data needs for local units and metropolitan areas, however, some comments will be given on needs in planning and development activities for data on areas as small as census tracts. The availability of such information will be considered in the appropriate section.

The analysis of past trends in the population of an area, the determination of current status and the making of projections into the future are, of course, closely interrelated. In carrying out such analyses, a careful study must be made of the major factors that have accounted for population growth or decline in the past, the relationship of growth in the area studied to that of other relevant areas, and how such factors and relationships are likely to change in future periods.

For convenience of discussion, data needs for establishing past population trends and present status of population are first considered. Then population projection needs are discussed. The geographical segments of interest are metropolitan areas or communities within metropolitan areas. Reference was made earlier to the need for data on population size, composition, distribution, and migration. A suggested list of such data requirements for analysis of past trends and current status of population is given below with a more specific discussion of the nature of these requirements following the outline.



## Past Trends and Current Status of Population

Data needs for establishing past population trends and present status of population of a metropolitan area or of a community within a metropolitan area.

- A. Level and rates of change of total population
  1. Numbers of persons
  2. Numbers of households
  3. Average size of household
- B. Component rates of population change
  1. Rates of natural increase
    - (a) Deaths and death rates
      - (1) Age, sex, and color - specific death rates
    - (b) Births and birth rates
      - (1) Age and color - specific birth rates
      - (2) Other fertility rates
  2. Net migration
- C. Composition and characteristics of population
  1. Age
  2. Sex
  3. Race and color
  4. Nativity
  5. Educational attainment
  6. Income
  7. Occupation
  8. Industrial composition
  9. Labor force status
  10. Labor force as a proportion of population of working age
  11. Suitable cross-classifications of above characteristics such as by age and sex (or sex-ratios by age), occupations by sex, and so forth.
  12. Trends in the above mentioned demographic characteristics
- D. Spatial distribution of population
  1. Standard metropolitan areas: central cities and the remainder of standard metropolitan area; urbanized areas
  2. Distribution among counties
  3. Distribution among cities, townships and boroughs within a county
  4. Density per square mile
  5. "Holding capacity" of land
- E. Comparisons of most items in A through D with similar data for surrounding communities or for communities of similar size, for the economic region, State and nation.
- F. Characteristics of the migrant population
  1. Age
  2. Sex
  3. Race and color
  4. Educational attainment
  5. Labor force status
  6. Occupation
  7. Income
  8. Reasons for migration
  9. Suitable cross-classifications of above characteristics such as age by sex, or sex composition of labor force, age composition of labor force, and so forth.

A few general statements about the data requirements implied in the above list are in order before specifying more closely the nature of these requirements. The list contains items referring to past population trends and current population status of a metropolitan area or a community within a metropolitan area. How long a period should be studied in order to establish underlying trend relationships and how current should data pertaining to present status be? In the very nature of the case, considering the multiplicity of goals in urban economic planning for a community and an even greater multiplicity of specific uses for population data in connection with the carrying out of plans and programs, any time periods selected are bound to be arbitrary. Statements such as, "a long enough period should be studied to permit understanding of the important determinants of change in the specific population series," provide no practical guidance. Furthermore, most analysts probably would agree that studying data for a long time period is apt to yield more insight than similar study of a short period of data, and the examination of quarterly or annual data is preferable to the investigation of decennial figures, other things being equal. But data requirements are relative to given purposes, and therefore certain practical delimitations must be imposed. Since the focus in this paper is upon data requirements and data availability for economic base studies, it is obvious that the requirements stated will be too stringent for certain purposes, and inadequate for others. It is also patently clear that while for the types of economic base studies being discussed here, data needs pertain primarily to counties as building blocks to aggregate to Standard Metropolitan Statistical Areas and similar suitable metropolitan areas,<sup>1</sup> and to individual communities within

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<sup>1</sup>In many instances, the nature of the data available will influence or even dictate the metropolitan area definition adopted. For example in the Philadelphia Planning Commission's study, Population Estimates, 1950-2000, Philadelphia-Camden Area, 1950-2000, Planning Study No. 1, Second Edition, published in 1951, the area of study was the Philadelphia-Camden Industrial Area as defined by the United States Census of Manufactures in 1940. This area includes Philadelphia, Bucks, Chester, Delaware and Montgomery Counties in Pennsylvania and Burlington, Camden and Gloucester Counties in New Jersey. The study pointed out that the Philadelphia Metropolitan District, as defined by the Census of Population, (1930 and 1940 only), was also considered as a possible study unit. It was rejected, however, because no consistent historical series of data were available for this area before 1930 and, by definition, this was a variable area whose boundaries change from decade to decade, since they were determined by density of population.

Metropolitan areas, of the type indicated above, have been defined differently by various agencies. A few examples prior to the 1950 Census were the metropolitan districts of the Census of Population, the industrial areas of the Census of Manufactures, and the labor market areas of the Bureau of Employment Security. The Bureau of the Budget, in an attempt to accomplish the use by Federal agencies of the same areas for the publication of general purpose statistics, established the standard metropolitan statistical area (SMSA), which except for New England is "a county or group of contiguous counties which contains at least one city of 50,000 inhabitants or more or "twin cities" with a combined population of at least 50,000. In addition to the county, or counties, containing such a city or cities, contiguous counties are included in an SMSA, if, according to certain criteria, they are essentially metropolitan in character and are socially and economically integrated with the central city."

For a detailed definition of SMSA, see U. S. Bureau of the Budget, Standard Metropolitan Statistical Areas, Washington, G. P. O., 1961.



these metropolitan areas, in certain other planning analyses, data on as small a geographical basis as blocks, census enumeration districts or census tracts may be required.

A specification of the quality of data is also desirable in a statement of data requirements. How accurate, comparable and timely must the data be and how frequently should they be made available? Again, homilies concerning the ideal situation are not of much practical import; reasonable and feasible guidelines are of greater utility. On the question of accuracy, the level of attainment of the federal Bureau of the Census would seem to be suitable and adequate for most planning purposes connected with the establishment of trends in population data. Sometimes, because of continuity of operation of staffs of personnel, greater accuracy is attainable in the results of sample surveys than in complete censuses. Greater accuracy is generally obtained from census enumerations than from postcensal or intercensal estimates. Postcensal and intercensal estimates are generally more accurate for larger than for small areas, and estimates are generally more accurate relatively for totals than for component parts of totals.

Changes in definition, scope of surveys and censuses and so forth are inevitable and perhaps the only practical thing that should be said concerning standards of comparability is that the possibility to reconstruct time series with "reasonably" homogeneous units should be present. Timeliness is another extremely difficult characteristic about which to generalize. Virtually all planning and development officials who testified at the recent congressional hearings on the need for a mid-decade census of population and housing felt that ten years was too long an interval to wait for the type of data provided by these censuses. There was considerable difference of opinion concerning the best method of resolving this difficulty, about which greater detail will be given at a later point, but that some type of mid-decade census or sample survey was required was the overwhelming consensus of the experts who testified. Some planners even indicated that a complete duplication of the 1960 Census in 1965 would not suffice, specifying needs for data more frequently than in five year intervals and for certain types of data which are not efficiently collected even in complete enumeration censuses. Concentrating on data needs for economic base studies, however, how timely and frequent must population statistics be? Obviously, this depends on how frequently the community or region carries out such studies. These studies have tended in the past to be intermittent, ad hoc or even one-time affairs rather than systematic, recurrent, integral parts of a continuous planning program or of an on-going economic intelligence or information system. If more frequent economic base studies are carried out, stepped up frequency and timeliness requirements present themselves. Furthermore, certain areas, particularly rapidly urbanizing communities such as the fringe areas of metropolitan areas, or central city areas undergoing swift changes in population composition would have more stringent requirements than more slowly growing or changing areas.

It is useful to keep conditioning factors such as these in mind in the discussion below, which attempts to specify series of data and the rough time periods in which they should be provided. Returning to the point concerning the inevitable deficiencies of data with which an investigator must work, it is the responsibility of such an investigator to "adjust" or correct the data to the extent possible, (as for example, adjusting for underenumeration of the population in age group 0-4 years), and to restrict himself to conclusions which are clearly valid, after taking the size and types of data deficiencies into account.



The discussion which follows is in the same order as the outline given above on data needs for establishing past trends and current status of population of a metropolitan area or of a community within a metropolitan area. Then, some consideration will be given to types of population forecasts or projections needed for economic planning or development purposes. It is perhaps worth repeating at this point, that the data needs given below pertain to counties, as the elements which make up a metropolitan area, or to individual communities.

### Level and Rates of Change of Total Population

Some planning studies give data on total population by decades back to the date of the first census in the United States, namely, 1790. For example, in a study of the population of the Wilkes-Barre/Hazleton Metropolitan Area,<sup>1</sup> figures were shown on total population by ten year periods from 1790-1950 for the Metropolitan Area, Pennsylvania, the Middle Atlantic Region, and the United States. Data were shown for the Anthracite Region<sup>2</sup> from 1850-1950 because of unavailability of data prior to 1850. These studies do not attempt to show breakdowns of total population for similar time periods. The only types of studies that tend to push estimates of detailed population characteristics back through lengthy time periods are scholarly demographic treatises.<sup>3</sup> These demographic studies generally, deal with State data, however, rather than with the smaller geographic sectors typically studied in Comprehensive or Master Plans.

In most planning studies, a major purpose in studying past trends in demographic data is to seek guidance and insight for forecasting or projecting population figures. Such projections should generally be made on the basis of careful study of past population and other data, on a detailed examination of the determinants of population change, on extensions into the future based on a set of alternative assumptions, and a healthy sprinkling of informed judgment. That mechanical extrapolations should not be given very much weight or credence is a generally accepted idea. With this sort of orientation, what temporal span is required for past population data? This paper will go along for the most part with the practical views expressed by the United States Department of Commerce in its publication Better Population Forecasting for Areas and Communities, where it indicates that in many areas of statistical analysis of past population growth, the study might extend back to about 1920.<sup>4</sup> Since that publication

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<sup>1</sup>The People of the Wilkes-Barre/Hazleton Metropolitan Area of Pennsylvania, Luzerne County Planning Commission, 1959. Similarly, total population enumerations for Bucks County are shown by decades from 1790-1950, in Bucks County Population Estimates, 1965, 1980, and 2010 by Jack E. Gelfand for the Bucks County Planning Commission, Doylestown, Pennsylvania, 1959.

<sup>2</sup>The Anthracite Region, as defined in the study, consists of Carbon, Lackawanna, Luzerne, Northumberland, and Schuylkill Counties.

<sup>3</sup>See for example E. S. Lee, Miller, A. R., Brainerd, C. P. and Easterlin, R. A., Population Redistribution and Economic Growth, United States, 1870-1950, American Philosophical Society, Philadelphia, Pennsylvania, 1957 and Warren S. Thompson, Growth and Changes in California's Population, The Haynes Foundation, Los Angeles, California, 1955.

<sup>4</sup>Stanberry, V. B., Better Population Forecasting for Areas and Communities, U. S. Department of Commerce, Washington, D. C., 1952.

is dated about 10 years ago, such a requirement at this time would be somewhat more stringent than the Department of Commerce's recommendations. However, it would seem more desirable, where data are available by decades, to start with 1920 rather than the depression year, 1930. Needless to say, nothing in the statement of data requirements in this paper should be construed to preclude more thorough analyses or examinations of longer and more frequent time periods of data.

The data requirement for the study of levels and rates of change of total population including numbers of persons, numbers of households, average size of household, is, therefore, stated here as the provision and analysis of such data by decades extending back to level figures for 1920. However, for total population, the data might very well be analyzed for a century or so, by decades. Annual estimates of the series listed under levels and rates of change of total population would also be desirable from about 1950 on. In special situations, such as communities which have very large institutional populations, or very large college student populations, or substantial resident military populations, separate examination of the levels and rates of change in these populations is advisable.

A statement of data requirements should probably specify the definitions of statistical units in the series desired. It would be foolish to define terms such as population or its characteristics in unconventional ways so that it would be improbable that such series would ever become available. Therefore, under this and subsequent headings, conventional definitions are implied. Thus, the number of persons in the population of an area, in accordance with census usage, is the number of inhabitants at their usual places of residence rather than at their legal or voting residences. A household is a person or group of persons living together in a dwelling unit, with one person specified as the head. The average size of household is obtained by dividing the total number of households by the total population. Difficulties arising from changes in definition and other problems of comparability will be discussed either under data availability or evaluation of data availability.

### Component Rates of Population Change

As indicated earlier, the change of total population can be subdivided into its component elements, (1) natural increase and (2) net migration; the elements of natural increase are births and deaths and the elements of net migration are in-migration and out-migration. It would be desirable to analyze trends in births, deaths, birth rates, death rates, net migration, and rates of natural increase using annual data going back to 1920.

Specifically what data should be used in the calculation of these rates? From the demographer's point of view, the appropriate ratio has in its numerator the number of events, and in its denominator a measure of the exposure to the risk of the events given in the numerator. Therefore, a crude birth rate for an area would be given by the number of births that occurred to the population of that area during a specified time period divided by the total number of person-years of life of the population during that period. Crude birth rates are usually approximated by the ratio of live births that occurred to residents of an area to total resident population of that area. Crude death rates similarly are approximated by the ratio of deaths to residents to total resident population. Both rates are usually stated per 1000 population. Numerous other rates have



been devised and used in careful demographic analyses. For example, under the heading of death rates, specific death rates for various population groups, infant mortality rates, neonatal mortality rates, maternal mortality rates, fetal death rates and so forth may be computed. Crude death rate computations suffice for many economic base study connected purposes although for careful analysis of reasons for death rate changes over time, for intercomparisons among communities, or for comparisons with larger areas such as the State or nation, the use of one or more of these other rates or standardization of death rates is advisable. Standardization for age, for example, might take the form of weighting a distribution of death rates classified by age groups by the percentage breakdown by age of a "standard population." Standard age-sex populations are often used as a basis for "controlling" for age and sex simultaneously. Thus for many purposes, age-specific, sex-specific or color-specific death rates may be needed.<sup>1</sup> In certain methods of post-censal population estimation, age-sex-color-specific death rates for an area may be required. In such cases, since the one-way classifications of death rates are generally available but the three-way classifications are not, the latter are estimated from the former.<sup>2</sup>

In the case of natality data, in addition to crude birth rates, more refined ratios are desirable for analytical purposes. A useful statistic, for example, is the children-to-women ratio, which relates children of certain ages, for example, those under 5 years (0-4) to women of certain ages, usually in the child-bearing period, for example, 20-44 years. Also, age-specific birth rates, that is, (live) birth rates by age of mother may profitably be analyzed. Both children-to-women ratios and age-specific birth rates should be analyzed by decades from 1920 on. Age group classifications may be in five year intervals, as given by the Bureau of the Census, (10-14, 15-19, etc.).

The elements of net migration are in-migrations and out-migrations. Net migration for a given area for a fixed time period is the number of people who move into that area (in-migrations) minus the number who move out of that area (out-migrations) during the time period in question. In the determination of numbers of migrants for small areas such as counties, in order to obtain a clearer picture of spatial mobility especially for planning purposes, it is desirable to obtain figures for net migration of the civilian non-institutional population alone.

There is a great lack of data on migration generally, and this deficiency is most severe for geographical segments smaller than states. Various types of net migration data or estimates are required for different current population estimation procedures. These will be discussed at a later point. Suffice it to say, for the present discussion, that as specified earlier, it would be desirable to have figures for net migration by years back to 1920. It would also be very

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<sup>1</sup>Age-specific, sex-specific, etc. death rates are death rates for specific age groups, death rates for each sex, separately, etc.

<sup>2</sup>See, for example, Donald J. Bogue and Beverly Duncan, A Composite Method for Estimating Postcensal Population of Small Areas by Age, Sex, and Color, Vital Statistics-Special Reports, Selected Studies, Volume 47, Number 6, U. S. Department of Health, Education, and Welfare, 1959, pages 168-169.



useful to have the in-migration and out-migration components of net migration and the characteristics of the migrant population. In metropolitan areas, it would be particularly desirable to have information on the movement from the central city out to suburban areas and flows in the reverse direction on perhaps an annual basis. Actually of course, planners can profitably utilize information on migration for much smaller areas than this and for purposes of acquiring a real understanding of what is happening to the compositional characteristics of the population of the metropolis, would need data on movements among its segments for perhaps geographical units as small as census tracts or blocks.

### Composition and Characteristics of Population

Continuing with the arbitrary criterion of indicating the desirability of obtaining data backwards in time to 1920, data requirements for the compositional characteristics of the population are therefore suggested as figures on the listed characteristics by decades back to 1920. It would obviously be quite desirable also, if estimates or data could be provided on many of these characteristics annually back to, say, 1950, particularly in areas or communities undergoing rapid change. The practical difficulties in meeting either of these requirements are tremendous. The priorities to be attached to information on these various characteristics is primarily dependent upon the specific problems of the metropolitan area or locality concerned. For example, if there has been a recent influx of industry requiring a highly skilled and well educated labor force, current, accurate data on the occupational and industrial composition and educational attainment distribution of the population and labor force would be desirable. In a community where the age or color distribution of the population is undergoing marked shifts, current data revealing these changes would be of considerable importance.

### Spatial Distribution of Population

In keeping with the pattern earlier established, despite the formidable data availability problems, the data requirements for information on the spatial distribution of population are suggested as statistics by decades since 1920 and by years since about 1950. Among the problems in meeting such requirements for example, is the fact that no data were published by the Bureau of the Census prior to 1950 for "standard metropolitan areas" or for "urbanized areas," as these geographical units were defined in that year.

A few definitions will be given to specify the nature of the data implied under "spatial distribution." Standard metropolitan statistical area (SMSA) was previously defined. Central city refers to the city or cities involved in the delineation of SMSA's. The SMSA must include at least one city with 50,000 inhabitants or more, or two cities, having contiguous boundaries and constituting, for general economic and social purposes, a single community with a combined population of at least 50,000. "Urbanized areas" have been defined to include not only the corporate limits of a city but the surrounding area which might be included under the term, the "greater" city. An urbanized area, as defined by the Census, contains at least one city of 50,000 inhabitants or more, as well as the surrounding closely settled incorporated places and unincorporated areas that meet a long list of criteria.

In the classification of the population into urban-rural residence categories, the current basic Census definition specifies the urban population as

those persons living in places of 2500 inhabitants or more incorporated as cities, boroughs, villages and towns, (except for towns in New England, New York, and Wisconsin) and the densely settled urban fringe of urban areas, whether or not incorporated.<sup>1</sup> In the subdivision of the rural population into farm-nonfarm categories, the Census currently classifies the farm population as those living in rural territory on places of 10 or more acres from which were derived sales of farm products amounting to \$50 or more (in 1959) or on places of less than 10 acres from which derived sales of farm products amounting to \$250 or more (in 1959). The major interest in data of this type is for analysis in metropolitan areas of the changes in proportions of urban, rural-farm and rural-nonfarm population over time and how these rates compared with similar changes in other relevant geographical areas.

Counties, of course, are the primary divisions of states. The primary political subdivisions of counties are referred to as "minor civil divisions." Under census terminology, distinctions are made among "places," "incorporated places," "unincorporated places," and "urban places" depending upon population counts and legally prescribed powers or functions of the communities. It does not seem relevant to bog down this discussion by specifying the differences among all of these concepts. Perhaps it suffices to indicate that most of the "places" enumerated by the Census are incorporated as cities, towns, villages or boroughs and that the Census gives data on number of inhabitants for a state by such classifications.

Population "density per square mile" of an area is simply the total population divided by the number of square miles in the area. In order to obtain meaningful comparisons over time, it is, of course, important to take account of annexations to or detachments from the area.

The "holding capacity" of an area refers to the maximum amount of population that can be sustained or accommodated by that area, taking into account current or expected residential densities as permitted by housing codes and zoning ordinances.

### Comparisons with Other Geographic Units

The desirability of comparing population data for the area studied with similar data for surrounding communities, communities of similar size, the economic region, the state, etc. is obvious. There usually is a strong interdependence among the geographic units enumerated above. For example, the economic future of a municipality within a metropolitan area may be primarily determined by levels of economic activity in the metropolitan area as a whole.

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<sup>1</sup>Also included in the Census "urban" category are towns in New England and townships in New Jersey and Pennsylvania which contain no incorporated municipalities as subdivisions and have either 25,000 inhabitants or more or a population of 2500 to 25,000 and a density of 1500 persons or more per square mile and counties in states other than New England, New Jersey, and Pennsylvania that have no incorporated municipalities within their boundaries and have a density of 1500 or more persons per square mile, and unincorporated places with 2500 persons or more.



Analogously, changes in the municipality's population may depend mainly on demographic trends in the larger metropolitan area. Comparisons of population growth rates and other information for the various geographic units cited aid in pinpointing whether and how the area of interest is forging ahead or losing ground and in general make for more meaningful interpretation of the area's data.

### Characteristics of the Migrant Population

With the knowledge that the data simply are not in existence, we again specify, as for other classifications of data requirements, that it would be desirable to have information on the characteristics of the migrant population from 1920 on by decades, and annually since 1950. With one exception, the characteristics, along with their desired classifications, have been spelled out earlier. The exception is "reasons for migration." It is doubtless advisable to refrain from listing any single set of reasons here, and merely to point out that the specific list should be dependent upon the nature of the population mobility problems faced by the metropolitan area or community involved.

### Population Projections and Forecasts

The need for population projections and forecasts is paramount in planning processes. As indicated earlier, the size, the nature and the timing of the future development of a community or region are dependent upon the numbers, characteristics and distribution of the people who will inhabit these areas. Estimates into the future must be made of these demographic characteristics to guide and aid in decision-making and action programs in urban areas.

A distinction is sometimes made between the terms "projection" and "forecast," particularly as they tend to be used by planners who prepare population studies as portions of Master Plans or Comprehensive Plans. The term "projection" is often reserved for extrapolations into the future of population trends, utilizing assumptions concerning movements in demographic factors alone, such as birth rates, death rates and rates of net migration. Sometimes, these extrapolations are referred to as "conditional projections," indicating that under the assumption that a specifically delimited set of factors persists into some future time period, these are the population figures which would result. "Forecasts" on the other hand, often imply that a large number of other relevant factors, such as potential land use for industrial development, residential and other purposes, the impact of governmental programs on the development of the local area and so forth, have been given explicit consideration in the estimates of future population. Some communities, in fact, have published population projection studies based primarily on the extrapolation of historical trends in population by various methods and then have indicated that "forecasts" will be forthcoming upon completion of economic and land use studies.<sup>1</sup> However, certain basic assumptions underlie both types of future estimates, such as no large scale war, the stability of the current form of government and economic structure and the absence of

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<sup>1</sup>See for example, Population, Part I, Joint Planning Commission, Lehigh-Northampton Counties, Pennsylvania, July, 1962.



calamitous destruction or disaster. Furthermore, certain assumptions concerning other factors such as land use and industrial development are implicit even in mechanical extrapolations of demographic factors. For example, if a certain pattern of out-migration from a single industry town has been observed in the past and this rate is projected into the future, it is implicit that an influx of new industry with accompanying in-flow of population is not anticipated. It would probably be difficult when confronted with various sets of estimates of future population to set up an unambiguous dichotomy of "projections" and "forecasts." No attempt will be made herein, therefore, to maintain a sharp distinction between the two terms.

What types of population projections or forecasts are required by a local community or a metropolitan area for planning and development purposes? Obviously, no facile rule-of-thumb will suffice as an answer to this question. Different communities have different needs. The relative population instability in certain areas as compared with others implies that different forecasts and forecast periods are practical for these diverse situations. Furthermore, even within a particular community, different types of land use require varying periods of insight into the future. Also, for certain purposes, rather gross estimates with reasonably wide tolerances for error would be appropriate, whereas for certain other purposes, greater precision of estimation is required.

Since the specifications earlier indicated on needs for past and current population data were at least in part focused upon providing an intelligent basis for projection for planning purposes, and since those engaged in comprehensive planning need to know the size, composition and spatial distribution of the people who will live in the planning areas, ideally, it would be useful to have forecasts for the same types of data used in assessing past and current status. That is, it would be extremely helpful in attempting to achieve the planning objectives of the community or region to have accurate forecasts of levels and rates of change of the total population, the component rates in terms of change due to natural increase and migration, the composition and characteristics of the population, its distribution over the planning area, similar figures for relevant areas for comparison purposes, and information in particular on the characteristics of the people who would be leaving the community or who would be migrating into it. Obviously, some of these figures would be extremely hard to come by. Some of them, for example, the characteristics of future migrants, would by the nature of the case, be little more than sheer guesses. The bases for making intelligent forecasts within some of these categories are so nonexistent that the estimates are virtually never attempted.

With the caveat that no single statement or list could suffice to depict accurately the population forecast or projection needs for use in Master Plans for communities and metropolitan areas, a few suggestions are given below concerning these data requirements.

Most population studies carried out in Pennsylvania by planning commissions or their consultants seem to have settled on about a 20 to 30 year period for population forecasting into the future. These estimates are usually given for five year periods. Despite the fact that certain types of community development programs involve projects having substantially longer life spans than a quarter of a century, this seems to be a reasonable estimation period in the context of the Master Plan. Since planning is viewed as a continuous process, these projections should be reviewed from time to time, adjusted in

the light of changing conditioning circumstances, and extensions of time period of forecast should be made as required.

All forecasts of population involve assumptions concerning the elements of natural increase, births and deaths and net migration. Projections of these components of change in total population are probably essential on the five year basis earlier referred to. Death rates are the most stable of these variables and are, therefore, usually the easiest to forecast accurately. If migration is not too important a factor for a particular community or region, age-specific death rates rather than overall crude death rates may be quite effectively utilized taking into account factors such as long-run downward trends in these rates and the effects of changing population composition in the forecast area. Birth rates are somewhat more affected than death rates by economic and social factors, changes in population composition and basic attitudes toward the advantages and disadvantages of having children. Again, where natural increase rather than net migration would appear to be the most important determinant of local area population change, age-specific birth rates rather than crude birth rates may be effectively projected. Forecasting numbers of births is a difficult task, however, and the variation among birth rates and fertility rates is greater than among death rates, from community to community.

The greatest uncertainties in projecting rates of population change are in the area of net migration. V. B. Stanbery has cited as the chief causes of migration,

"The desire for better economic opportunities. Interstate migration is largely a movement from areas with low planes of living to areas with higher income levels.

The attraction of milder or more suitable climates in other areas.

Desire for better living or housing conditions. This applies particularly to short distance migration within the same general locality.

Movement for reasons of health, education, or retirement."<sup>1</sup>

The first of these reasons is clearly the predominant one. Bread-winners of families tend to migrate to those communities which offer job opportunities for them. Trends in employment opportunities exert tremendous influence upon the population size and composition of local and metropolitan areas. Economic activity at national, state and local levels is of crucial significance to the direction and volume of the mobility of the population and must in some way be taken into account in migration forecasting. Clearly, the potential number of relevant factors at these various levels is so staggering that the human mind cannot appraise them and their interactions in any clear way. This is a general problem of forecasting, of course, which extends beyond the matter of migration estimation but is particularly acute in this latter area. The method of handling this basic question in population forecasting has been the use of more than single figures in the presentation of projections. Although many communities

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<sup>1</sup>Stanbery, V. B., Better Population Forecasting for Areas and Communities, U. S. Department of Commerce, Washington, D. C., 1952.



and areas utilize single-figure forecasts, there has been a definite tendency recently to present either high and low projections thus giving a range, or high, medium and low estimates based upon different sets of assumptions.

There are undoubtedly situations in which single-figure forecasts are most useful, others in which multiple projections are preferable. The advantages of the different types of estimates have been spelled out in various writings. For present purposes, perhaps it suffices to indicate that in the context of economic base studies, it is undoubtedly useful to use high and low projections as a means of establishing a range within which it is highly probable that the future population will fall. Of course, there is never any prior assurance of the accuracy of future estimates. Nevertheless, the analyst should try as hard as he can, on the basis of different sets of assumptions, favorable and unfavorable to population increase, to establish a realistic range for the population forecast. That is, difference between the high and low figures should not be so great as to preclude the use of these projections for practical planning purposes. The specific planning purpose should determine which one or ones of the projected figures, low, medium or high would be used in a particular instance. Perhaps, in planning the requirements for provision of certain essential utilities and other physical facilities, it may be preferable to err somewhat on the high side and, therefore, to use the high projection, whereas in estimating revenues which are a function of total population, it may be better to be somewhat conservative and err on the low side, using the low projection. On the other hand, in working out future compositional distributions of population, it may be too tedious and time consuming to utilize alternative total population projections. In such cases, the medium estimate or a single projected population figure may be the best choice. The main principle to be kept in mind in the construction of population forecasts for economic base studies is that their major purpose is as useful guides to action or as aids in decision-making processes.

As earlier indicated, ideally we would like to have forecasts of the same items that were indicated as data needs for establishing past trends and current status of population in a community or metropolitan area, but the practical limitations upon the obtaining of meaningful projections for many of the items are staggering. Also, the various needs certainly have different orders of priority. In conjunction with the data needs for projections of natural increase and migration mentioned above, there are obvious needs for projections of the composition of population in the forecast area. Among the most important compositional factors for a large variety of purposes are the sex, age and racial distributions of the population. These characteristics are sometimes referred to as the "structural" features of a population, that is, they are unchangeably determined as compared to characteristics such as education, occupation and income. These structural characteristics are major factors utilized along with estimated birth, death and migration estimates in some of the more important analytical methods of population projection. For example, in the "cohort-survival" technique, figures are extended forward since the last census by age and sex groups. Survivals of resident populations are usually computed with the use of age-specific mortality tables for each sex. Migration projections are distributed among these same groups and adjustments for expected numbers of births using assumed age-specific birth rates for mothers are made. The final product, therefore, is a projection of the age and sex distribution of the forecast area population. It is highly recommended that where there are large proportions of non-white populations, that separate estimates be obtained for whites and non-whites.



The relative stability of birth and death rates compared to migration rates and the fact that administrative systems exist for the generation of natality and mortality data lead to the fact that the most crucial needs for population data for urban planning purposes are in the area of migration statistics. Insofar as past information is concerned, availability of data is also extremely weak on this subject of population mobility. According to information received from the Pennsylvania State Planning Board, based upon requests they receive from various planning commissions throughout the State, the greatest single need in the population field is for data and projections at local and county levels on migration.<sup>1</sup> There has really been a dearth of serious professional work in this area, not only among those oriented toward planning and development problems, but even among demographers. Dudley Kirk in his presidential address delivered to the Population Association of America on May 6, 1960 remarked,

"The study of internal migration is the stepchild of demography. Too little attention has been given by the leadership of our profession to the theory and measurement of migration, despite its role as the chief determinant of differences in population change and structure among local populations, and indeed now for many states. In the words of one leading authority in this field, the majority of recent migration studies are 'planlessly empirical and trivial in content.' This is a harsh judgment. The study of migration presents peculiar problems in terms of definition and complexity, but I feel confident that the application of the technical virtuosity so evident in the field of natality could yield great progress."

Another problem that the Planning Board particularly singles out based upon large numbers of requests is the need for county population projections with the type of compositional estimates indicated above. A brief description of a research contract made by the State Planning Board with Temple University to produce these latter estimates for counties in Pennsylvania is given in the section on data availability.

### Small Area Data Needs

Since the orientation of this paper is towards data requirements and availability for economic base studies used in urban planning and development, little emphasis has been placed upon smallest area statistics, such as census tract, enumeration district, block and parcel statistics. Another reason for the lack of emphasis on these small area data is that the focus of this study is upon being helpful to the State of Pennsylvania in the improvement of data for the above-mentioned purpose. Our point of view is that economic base studies should be viewed as establishing the broad, longer range trends for localities, counties and regions and that rather different, more microunit types of data are often required for the day-to-day operations of city planners. Small area data such as census tract and block statistics are provided primarily through the federal censuses and will continue to be so provided. Municipalities have, on the other hand, utilized data systems such as Real Property Inventories in which punch cards have been kept for every property

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<sup>1</sup>Letter from William H. Shellabear, State Planning Board, Commonwealth of Pennsylvania, Harrisburg, Pennsylvania, dated August 14, 1962.

in the city. These inventories have usually been annually conducted and have provided data on population items such as number of families in addition to a wealth of detail on housing, income and related matters. Systems such as the Real Property Inventory of Metropolitan Cleveland have relied upon censuses which they conduct to provide basic information, whereas other systems such as the urban planning information system proposed by Campbell and LeBlanc of George Washington University for the Maryland-National Capital Park and Planning Commission would utilize land use information on punched cards and tape as a sampling "universe" and would collect data such as family and employment characteristics by sampling from this universe.<sup>1</sup> In systems such as these, basic information is assembled on cards or tape for every parcel of land in the planning area for both the property and people who dwell or are employed on the property. In some of these programs, grid coordinate locational systems are established to locate uniquely by numerical codes every parcel of land. Continual updating of the records is accomplished through the utilization of governmental sources, sampling and enumeration procedures. For example, the Campbell-LeBlanc study recommends the employment of the land use parcel cards as a universe for the carrying out of two annual surveys which would yield the desired economic and population data. Presumably, these surveys would provide the type and amounts of information required by planners between the federal censuses.

A number of other possible methods of organization of area data services have been proposed; it is not within the scope of this study to evaluate these proposals. However, their potentialities for providing organized, comprehensive and systematic information systems for local and regional planning purposes are worthy of the most serious consideration.

The particular small area statistical unit according to which planning information should be collected is a serious problem at the sub-local level, and is a question that is partially answered by purpose of investigation. At least the following units are utilized: central business districts, school districts, planning analysis areas, postal zones, enumeration districts, census tracts, blocks, and the aforementioned grid systems. There is a need for a resolution of the problem of how best to organize the collection of small area data to serve the purposes of municipal, county, regional and state planning and development activities.

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<sup>1</sup>Campbell, Robert D. and Hugh L. LeBlanc, An Information System for Urban Planning, The George Washington University, Washington, D. C., 1962.



## Nature of Available Data

The availability of population data for economic base studies used in urban planning and development will be discussed under the same headings utilized in the statement of data requirements. In this discussion, an attempt will be made to indicate changes in definitions affecting comparability, changes in geographical segments for which data are published, and similar items bearing on the availability of data.

There are various levels of availability of data. Published data in the form in which the consumer desires them, may perhaps be considered as the most available form of this information. Data which are in the form in which the consumer would want them, which have not been published, but are obtainable from an agency at a nominal cost of transcription or reproduction may be considered to be slightly less available than the published data. Even less available are data which have been collected, but whose release would entail considerable work and cost, perhaps requiring a return to the original schedules or the punching and tabulation of special decks of cards. Finally, at the opposite end of the spectrum from readily available published data in the form in which the consumer wants them is the classification of unavailable data, in which case the desired data may simply not have been collected. Other intermediate classifications may, of course, be set up. For example, data may be in an unsuitable form from the standpoint of the spatial or temporal units desired, but may permit reasonable estimation of data in the desired form. However, no elaborate rubric of availability of data appears warranted here or in other sections of this paper. Unless the desired data are published or may easily be obtained from the collecting agency at nominal cost, for most practical purposes, they may be considered unavailable for inclusion in economic base studies.

In the discussion which follows, as was the case in the delineation of data requirements, emphasis is upon availability of data for metropolitan areas, using counties as "building blocks" and for communities within metropolitan areas. Availability of data with these geographical segments as units, is, therefore, emphasized. As indicated earlier, some comments will be made later about the availability of smaller area statistics as, for example, data by census tracts. These data have many uses for economic planning and development purposes, but, in general, do not constitute the main fodder of metropolitan area or local community economic base studies. The focus is at first upon population data collection programs. Following this, consideration will be given to data availability for current population estimation and population projection.

The main sources of population data in the United States are population canvasses and the vital registration system. In certain foreign countries, continuous population registers are in operation in which permanent records are kept on the entire population. Even though, theoretically, the continuous population register serves the purposes of both population canvasses and vital registration systems, countries using these registers have still found it necessary to take periodic census enumerations as a verification and supplementary procedure.<sup>1</sup>

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<sup>1</sup>See Hauser, P. M. and O. D. Duncan, The Study of Population, The University of Chicago Press, Chicago, 1959, page 53, for discussion of this point.



Population canvasses may take the form of either complete census enumerations or sample surveys. Undoubtedly, the major source of population data for the wide variety of uses in urban planning and development is the Bureau of the Census of the United States Department of Commerce. The Bureau conducts a complete enumeration of the population every 10 years and details on such characteristics as sex, age, marital status, national origin, race, income, occupation, and so forth are published for some or all of areas such as states, counties, standard metropolitan statistical areas, urbanized areas, urban places, minor civil divisions, census tracts, and blocks. Various types of unpublished data and special tabulations are obtainable by request from the Bureau of the Census. These decennial censuses represent indispensable sources of current demographic information. Furthermore, they serve as statistical reference points for making postcensal and intercensal estimates and projections of nature and rates of population change. Special censuses may be contracted for by communities for enumerations at periods other than the regular decennial census years. The need and interest here is dramatized by the fact that some 1500 communities contracted with the Bureau of the Census for such special censuses between 1950 and 1960. The Bureau of the Census also conducts a monthly sample Current Population Survey, which aims to provide useful types of information at the national and regional (for example, Northeast, North Central, and so forth) levels, but which is not designed to provide local community and metropolitan area data of the type discussed in this paper.

Turning from Federal to State sources, we find a wide variety of population figures originating from school censuses conducted under the auspices of certain State agencies throughout the country or from reports submitted to State agencies. In Pennsylvania, the agency responsible for school censuses is the Department of Public Instruction. Also, this Department receives a variety of information concerning school attendance and school enrollment on reports submitted to it. Such school enumeration and other figures are directly used for a large number of governmental and educational administrative purposes. One of their indirect uses, of interest in this paper, is as a component of certain methods of estimation of population of local areas.

The school census in Pennsylvania attempts a determination of the status of all children in the State from birth to eighteen years of age. In school districts where "adequate continuing" school censuses are maintained, an enumeration is required once every three years of all children from birth to eighteen years of age, recording name, date of birth, age, sex, nationality, place of residence, name and address of parents or persons in parental relation, the name and address of the employer of any child under 18 years of age who is engaged in any regular employment or service. In school districts where an "adequate continuing" school census is not maintained, a similar enumeration is required every year. In first class school districts, where the city bureau of vital statistics is able to provide data on live births for each year, the enumeration may be carried out for children between the ages of five and eighteen years. These enumerations must be made by inquiry at all family residences in the district.

A matter of interest from the viewpoint of analysis and estimation of employment data is that although employment data for the parents or guardian are not required by law, occupation and place of employment for these individuals are recorded on the official Continuing Census Card (Form PICA-1CC). Such information, however, is not designed to yield useable labor force infor-

mation and its inadequacies in that context are obvious.

The use of school enrollment figures in current population estimation and an interesting experiment being carried out in Bucks County on the establishment of a much wider information system, of which the collection of the legally required school enrollment figures is a part will be discussed at a later point in this section.

Another State agency which publishes a considerable quantity of population data for Pennsylvania is the Department of Health. Its data stem from the second main source of population statistics earlier referred to, namely, the vital registration system. The Department of Health publishes natality and mortality statistics for Pennsylvania shown separately for the State, counties and selected cities. The statistics are obtained from original certificates filed in the Vital Statistics Section and from transcripts of original records affecting Pennsylvania residents which have been filed in other States. They are published in a series of quarterly and annual reports.

Since the Philadelphia and Allentown-Bethlehem-Easton metropolitan areas extend into New Jersey, at least some mention should be made of data availability from that State.<sup>1</sup> Insofar as school enrollment and vital statistics data are concerned, about the same type of information is available for counties and incorporated municipalities as is true in Pennsylvania. More specific reference will be made to New Jersey current population estimation and population projection activities at the appropriate point.

Federal and State agencies conduct the major population primary data collection programs. Of course, data collection is carried out locally and local agencies may engage in some collection activities, as for example, school district execution of school censuses. There are occasional instances of other agencies being involved in primary data collection such as county planning commissions in joint county planning commission - local school district programs of conducting school censuses. Certain private business organizations engage in population estimation and projection but in general do not carry out primary data collection. It appears clear, therefore, that population primary data collection is essentially carried out under Federal and State programs.

The availability of Pennsylvania population data will now be considered under the same headings as were given for data needs. Except in the case of "component rates of population change," the availability of annual data will be discussed later under the heading "current population estimation."

#### Level and Rates of Change of Total Population

Data on total numbers of persons by counties and individual communities in Pennsylvania are available by decades from the data of the earliest federal

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<sup>1</sup>The Philadelphia SMSA includes Burlington, Camden and Gloucester Counties in New Jersey. The Allentown-Bethlehem-Easton SMSA includes Warren County in New Jersey.



census (1790). There have been changes in county and municipal boundaries which render the construction of time series difficult in certain cases, but in Pennsylvania there have been relatively few changes in county boundaries in recent years. The last modification of county boundaries was the annexation of part of Montgomery County to Philadelphia County in 1916. Therefore, with respect to the suggestion under data requirements that total population data might well be analyzed for a century or so, by decades, it is feasible for counties and for municipalities which have been in existence that long, with appropriate adjustments made for changes in geographical boundaries. In any event, in connection with the suggested date of 1920 as the starting point for decade data on numbers of persons, numbers of households and average size of household, comparable data on a county basis are available for the first of these categories. There have, of course, been changes in the census publication program for total population for geographical segments smaller than counties. In 1920, total population figures were published for counties, incorporated places (boroughs and cities) and certain other civil divisions of counties (primarily wards of incorporated places having 5000 inhabitants or more). Census tract data were tabulated for one city (New York) in 1900, eight cities in 1910 and 1920, eighteen cities in 1930 and sixty cities in 1940. By 1950 the Bureau of the Census distinguished census tracts for 114 large cities (population of 50,000 or more) and in areas adjacent to some of these cities.<sup>1</sup> Publication of census tract data did not begin, however, until 1940.

By 1960, the Census included in its publications final population counts for states and counties and their urban and rural parts, and for standard metropolitan statistical areas, urbanized areas, all incorporated places, unincorporated places of 1000 or more inhabitants and minor civil divisions, (Series PC(1)A).<sup>2</sup> Census tract data on population subjects including, of course, total numbers of persons were published for each of the 180 tracted areas. Enumeration district tabulations, basic "building blocks" which can be aggregated to larger areas, are available in the form of magnetic computer tape.

Certain changes have occurred in the Census procedure for tabulating persons according to place of residence. In 1950 for the first time, college students were considered residents of the communities in which they lived while attending college rather than as in previous censuses, in the communities which were their usual place of abode. This change would make for minor incomparabilities in many communities, but might be important for certain areas where college populations represent a substantial fraction of the total resident population. Another rather minor change was that crews of vessels of the U. S. Merchant Marine in harbors of the United States were enumerated as belonging to the populations of the ports where their vessels were berthed in 1950 but were credited to the home port from which the vessel operated in 1940.

Members of the Armed Forces quartered on military installations are enumerated as residents of the communities in which these installations are located and members of their families are enumerated where they actually

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<sup>1</sup>Census Tract Manual, Fourth Edition, Bureau of the Census, U. S. Department of Commerce, U. S. Government Printing Office, Washington, D. C., 1958.

<sup>2</sup>Availability of Published and Unpublished Data, Bureau of the Census, U. S. Department of Commerce, Washington, D. C., 1961.



live. There are a number of other conventions concerning the treatment of persons in hotels, motels, institutions, Americans overseas working at civilian jobs abroad, persons abroad on vacation trips, etc. which may be ascertained by reference to Bureau of the Census population volumes. A general principle is that transients or visitors are allocated to the communities which represent their usual places of residence.

For data on numbers of households and average size of household, the other two categories listed under "level and rates of change of total population," the U. S. Census of Population must again be used as the basic source of information. Census definitions of family and household have undergone numerous changes over time. Going back to 1880, the family was defined as "...a group of individuals who occupy jointly a dwelling place of part of a dwelling place."<sup>1</sup> By 1910, this had changed to "...a group of persons living together in the same dwelling place. The persons constituting this unit may or may not be related by ties of kinship." The distinguishing feature of a dwelling place was that one or more persons regularly slept in such a place. By 1900, private or "natural" families were differentiated from economic families. Thus, family and household were synonymous prior to that date, with quasi-households such as hotels being lumped together with private households. The 1930 and 1940 censuses continued the distinction between private families and quasi-households, but individuals living alone or with servants or lodgers were classified as private families.

It was not until 1947 that the currently used concept of "household" was adopted, that is, "a household is a person or group of persons living together in a dwelling unit, with one person designated as the head." Families consist of groups of related persons living together. Quasi-households include institutions, group living arrangements, and lodging houses if there are five lodgers or more. These definitions have been used since 1947 in Current Population Surveys, special censuses and surveys, and in the decennial censuses. Clearly, serious comparability problems affect the construction of time series of households. In economic base studies including such data, ad hoc procedures have usually been used such as listing under the heading of households, data for families prior to a given date and figures on households thereafter.<sup>2</sup>

### Component Rates of Population Change

The primary data collection of birth and death data, used in the analysis of population change into its components, is carried out in Pennsylvania by the Department of Health. In the annual statistical reports published by this department, data are shown for number and rates of resident deaths, live births, fetal, infant, neonatal and maternal deaths by county and certain cities in Pennsylvania.

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<sup>1</sup>U. S. Census Office, 1880, Tenth Census of the United States, June 1, 1880, Instructions to Enumerators, Schedule 1, 26 as quoted by Conrad and Irene B. Tauber in The Changing Population of the United States, Census Monograph Series, John Wiley & Sons, Inc., New York, 1958. The discussion of definitional and conceptual changes in "household" and "family" borrows heavily from the Taubers' study.

<sup>2</sup>See for example, Population in Fayette County, Pennsylvania, Fayette County Planning and Zoning Commission, 1958, page 14.

Similar data are also published on a quarterly basis.

The Department has published data on deaths on a county basis since 1906 and on births since 1915. The present publication program provides information on births and deaths annually for all counties and for selected cities and boroughs. The criterion of selection is that the population of the incorporated civil division must exceed 20,000 on the basis of the last decennial enumeration. Births and death totals have been available on an unpublished basis for civil divisions with greater than 10,000 population since 1906 for deaths and 1915 for births.

Beginning with annual 1961 data, a considerable amount of information is available from the Department of Health by incorporated civil divisions for the entire Commonwealth. These data are available on punch cards, giving deaths by cause and age; births by the standard classifications of age of mother, sex, and so forth. Although not fully published by municipality, these data are available upon request.

As defined by the Pennsylvania Department of Health, and as usually defined elsewhere, the annual crude death rate is the ratio of the number of deaths in a specified area during a specified calendar year to the midyear population for the same area and year. Conventionally, this and the other rates defined here are multiplied by 1000. All rates, of course, refer to the same area and year. The annual crude live birth rate relates the number of resident live births to the midyear population; the annual fetal death rate relates the number of fetal deaths (stillbirths) to the number of deliveries (live births and fetal deaths); the annual infant death rate relates the number of decedents under one year of age to the number of live births; the annual neonatal death rate relates the number of decedents under four weeks of age to the number of live births; the annual maternal death rate relates the number of maternal deaths to the number of live births.

The statistics referred to above are obtained from original certificates and from transcripts of original records affecting Pennsylvania residents which have been filed in other states. Birth and death data can be classified according to the place of occurrence of the vital event or according to the place of residence of the person to whom the vital event occurred. For planning purposes, data classified by place of residence are the more appropriate measure.

Recent improvements in the procedure of birth and death reporting introduced by the Department of Health should aid considerably in more accurate and useful estimation of components of population change for communities and other areas in Pennsylvania. These procedural changes provide for better allocation of births and deaths to geographic areas of residence. For example, in the case of birth reports, the format of the birth certificate was changed to permit separate recording of the residence and the mailing address of the mother. The confusion of these two items formerly was particularly marked in areas surrounding large cities. Also the quality of residence coding was improved by a question as to the hospital reporting the birth. The Department of Health has reworked its data to obtain comparable time series figures and has found it possible to push its series back to 1937 on an allocation by place of residence basis. Prior to that date, the figures remain on a place of occurrence basis. This is an illustration of a major practical difficulty which arises in the operation of statistical programs. Improvements in definition or in concept may be made in the statistical units in which data are collected, in many cases, (although not in the above illustration), because of changes in underlying environ-



mental or conditioning phenomena. The effectuation of such changes then makes it more difficult and sometimes virtually impossible to obtain continuous time series on a homogeneous basis when both earlier periods and periods since these changes are included in an analysis. Another illustration of these difficulties is given in the chapter on employment data where problems arising from shifts to Standard Industrial Classification codes are discussed.

In order to obtain birth rates and death rates, the absolute numbers of births and deaths must be divided by the numbers of persons living in the areas in question. This raises the very important problem of current population estimation for areas smaller than the State. Of course, when federal decennial census data are available, these figures are used as the correct population counts. However, postcensal population estimates are required for years subsequent to decennial census years. Since the Pennsylvania Department of Health uses the postcensal population estimates of the State Planning Board as the basis for computing birth and death rates, a description of the population estimation methods employed by this latter agency will now be given. Other methods of current population estimation will be considered subsequently.

County population estimates are available from the State Planning Board back to 1942. For the period between 1942 and 1954, using a technique described below, the State Planning Board made these county population estimates for every second year. Thus, these estimates were produced for 1942, 1944, 1946, 1948, 1952, and 1954. Census enumeration figures were, of course, used for 1950. The technique used, a "migration and natural increase" method, has been abandoned. The method and the reasons for its discontinuance were given by the State Planning Board as follows:

"...That method depended on tracing the movement of population through the reports of the ages of school children collected by school districts for the use of the Department of Public Instruction. These groups of children in each county were compared with children two years younger as reported two years previously. Any difference observed in their numbers was used as a basis for estimating the movement of population into or out of a county. While this method has led to estimates that were satisfactory in former years, it was open to serious objections, the first being that the school census is taken by local school authorities and is of uneven accuracy. In some counties the census is conducted with great care and the results are reliable. In others this is not true. In addition the number of children in private and parochial school has increased considerably and the number of these children by age groups is reported by the school districts, but is not summarized for counties by the Department of Public Instruction. In some cases the number of children in the parochial schools may reach as high as 30%, in other counties, there are practically no children in parochial schools. This fact requires that every school district's return must be examined to obtain a county total and the suspicion remains that in many school districts the report of children by age is not reliable. It is also true that by the method just described the population was traced at two year intervals. This meant that any error in a previous estimate such as in 1952 would be perhaps compounded by 1954 and still further compounded by 1956. On



the third repetition of this process which would have been necessary for the 1956 estimates the possibility of cumulative error seems to preclude dependability in the result. Another rather serious problem in assessing the population by this means is that of associating the children with the total population and in determining the extent to which the movement, shown by the rise or fall in the number of children should be applied to the natural increase."<sup>1</sup>

In 1957, the State Planning Board shifted to a "vital rates" method of population estimation. As implied by the name, this technique utilizes birth and death rates to estimate population. The basic assumptions in this method of estimating county population are that the relationship between county and state birth rates is the same in the year for which the population estimates are being prepared as was true in a base period, usually a decennial census year or a three year period centered on the census year and a similar assumption for death rates.<sup>2</sup> Thus, it is assumed that there is a perfect correlation between the fluctuations of county and state birth and death rates. This assumption therefore, implies that changes in the relationships of county births and deaths to state births and deaths stem from shifts in total population. Thus if an estimate of the total population for the state is available, an estimate of the county's population can be derived.

Specifically, the State Planning Board has prepared its estimates as follows. The estimation of a county's 1961 population is given as an example. Birth rates for the county and state were determined for 1960, the decennial census year, and the state birth rate was estimated for 1961. The denominator used for the 1961 state birth rate was the U. S. Bureau of the Census provisional estimate of Pennsylvania's population. Conceptually, the county's 1961 birth rate is computed as the unknown quantity in the following equation:

$$\frac{1960 \text{ county birth rate}}{1960 \text{ state birth rate}} = \frac{\text{Unknown 1961 county birth rate}}{1961 \text{ state birth rate}}$$

However, one adjustment was performed prior to the use of this equation. Since the Planning Board also has prepared individual population estimates for 46 cities and four boroughs with populations in excess of 10,000,<sup>3</sup> the populations, births and deaths for these cities and boroughs were subtracted from their respective county figures. The county birth rate is therefore computed for the county minus cities and boroughs which are individually estimated. After the separate estimation of the populations of the cities and boroughs, these figures are added back into the previously determined county figures to yield a total county estimate. The same procedure is repeated for death rates. Two separate estimates of county population are determined by dividing known 1961 county births by the estimated county birth rate and known 1961 county deaths by the estimated county death rate. The arithmetic mean of these two estimates is taken as a tentative county population figure. The estimates are then

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<sup>1</sup>"A Suggested Method for Estimating County Population in Pennsylvania," mimeograph, State Planning Board, October 15, 1957.

<sup>2</sup>op. cit., and "Methodology for 1961 Pennsylvania Population Estimates," mimeograph, State Planning Board, 1962.

<sup>3</sup>One exception is the city of Arnold whose population in 1960 was 9,437 and was estimated for 1961 at 8,891.

adjusted somewhat in order that the total for the counties of Pennsylvania may equal the U. S. Bureau of the Census' Pennsylvania population estimate. The State Planning Board repeated the above procedure for obtaining unadjusted population figures using rates based upon 1960 and 1961 average births and deaths rather than 1961 data alone. The population estimates based upon 1961 rates and upon 1960-1961 average rates were then averaged to give county population.

For earlier years, three year averages were used to estimate population for a given year. The Planning Board gives the following example of the estimation of county population for 1955 using birth rates:

$$\frac{\text{Average county births (1949-50-51)}}{\text{County population, 1950}} = \frac{\text{Average county births (1953-54-55)}}{\text{County population (1955)}}$$


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$$\frac{\text{Average Penna. births (1949-50-51)}}{\text{Penna. population, 1950}} = \frac{\text{Average Penna. births (1953-54-55)}}{\text{Estimated Penna. population (1955)}}$$

Since the average county births on the right hand side of the equation are centered on 1954, the population estimate thus derived is for 1954. This population figure is projected for one more year to 1955 under the assumption that the 1950 to 1954 annual trend will continue for one more year.

The State Planning Board has prepared annual county population estimates for Pennsylvania using this new method back to 1951, with estimates for the principal cities going back only to 1957.

The vital rates method explained above essentially averages two estimates based upon birth and death statistics and attempts to estimate population by making an allowance for the change in birth and death rates since the preceding decennial census year. For individual communities or for individual metropolitan areas, deaths may provide a more reliable index than births, or vice versa. The State Planning Board indicates that in view of the sharp changes which have occurred in the post World War II period in birth rates, death rates have been a more reliable index of population change. It is clear, however, that the vital rates method explained above gives equal weight to estimates derived from both types of rates. The method may be used for areas for which vital statistics are available on a residence basis. For periods more than, perhaps, five years removed from the last decennial census year, it is probably wise to investigate carefully the necessity of making adjustments in the above procedures. For example, as the State Planning Board recognizes, one possible difficulty arising from this technique is that possible improvements in public health which are reflected in decreased death rates result in decreased estimates from the population component based on deaths.

For planning purposes, in analyzing reasons for local and metropolitan area changes in population characteristics and composition, it is useful to have certain specific death rates and birth rate data, such as were suggested in the section on data requirements. Although age-specific death rates and age-specific birth rates are tabulated and published by the Department of Health for Pennsylvania as a whole, no specific birth or death rate data are prepared for counties or smaller civil divisions. Certain agencies in individual cities or counties may attempt to prepare estimates for specific birth or death rates, but there is no coordinated program for the preparation of such estimates. As a matter of



fact, accurate estimates of these specific vital rates are extremely difficult to obtain. The denominators of such rates are population counts by age, sex, color, and so forth, which, of course, are only available with acceptable degrees of accuracy for most small areas in decennial census years.

We turn now from the consideration of data on births and deaths, the components of natural increase to the other factor in population change, net migration. Migration refers to movements of people across political boundaries, which involve changes in the places of residence of these people. International migrations, which take the form of movements across national boundaries are subject to definite administrative controls, and therefore, the United States has a well organized program for collecting in-migration and out-migration data. Since internal migration within the United States is not subject to these administrative controls, it is perhaps not surprising that there do not exist highly organized systems for producing data concerning this population mobility. At the federal level, the U. S. Bureau of the Census has supplied data in the past few decennial censuses on internal migration which permitted the analysis of streams of migration by types of communities, and also for a number of these streams made possible an analysis of the characteristics of the migrants. These migrations have referred typically, however, only to changes of residence since a date five years or one year earlier than the census. At state and local levels, statistics on migration have not been maintained as parts of organized data collection systems. Typically, information concerning migration for sub-state areas has been determined through analysis of census data and by estimation made through analytical procedures such as vital statistics and survival rate methods. These methods typically arrive at migrants as residual population groups after considering populations in terms of flows of births and deaths.

In one form of the "migration and natural increase" method of current population estimation for local areas (Bureau of the Census Method II), net migration is estimated, using school enrollment or school census data, by the difference between the actual population in a given age bracket, usually the grammar school group, and the population expected on the basis of the most recent Census and natural increase figures, and from current data on migration rates by age groups.<sup>1</sup> In other methods, school enrollment in successive school years and grades are utilized, net migration rates of previous periods are projected, and so forth.

The Bureau of the Census first asked a question about "previous place of residence" in the 1940 population census. The respondent was asked about where he lived on April 1, 1935. For persons who lived in a different place, the name of the city or town and county of previous residence were recorded. Thus, only net movements over the five year period could be determined. That is, a person may have moved several times during the five years, but only his first and last addresses were noted; or he may have moved back to his original place of residence by the 1940 census date and would not have been counted as a migrant. The Scripps Foundation, utilizing the cards on which the population data were punched, made a study for Ohio,<sup>2</sup> which gives a good

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<sup>1</sup>For detailed descriptions of these methods, see U. S. Bureau of the Census, Current Population Reports, Series P-25, No. 133, March 16, 1956 and No. 165, November 4, 1957.

<sup>2</sup>Thompson, Warren S., Migration Within Ohio, 1935-40, Scripps Foundation Studies in Population Distribution, No. 3, Miami University, 1951.



idea of how such data may be used to analyze migration by types of communities of origin and destination in various subregions of the state. For example, it examined streams of migration within metropolitan subregions, (subregions consisted of a single county or group of counties), between metropolitan subregions, within and between nonmetropolitan subregions, and from (to) metropolitan to (from) nonmetropolitan subregions. In analyzing these streams, it examined rates of migration, factors contributing to decentralization (movement from central cities to "rings," or the remainder of the metropolitan region), sources and destination of inter-metropolitan migrants, and so forth. Furthermore, the data permitted analysis of the characteristics of migrants, so for intra-state migrants, the study examined such characteristics as sex, marital, educational, and employment status, occupational distributions and the like.

World War II prevented the U. S. Bureau of the Census from carrying out on schedule its intended publication program for the 1940 census on migration. Consequently, three of its volumes on migration data did not appear until 1946, quite far removed from the time periods to which the data pertained. Clearly, the undertaking of studies such as the one carried out by the Scripps Foundation from punch cards, however, was beyond the resources of most planning groups.

The U. S. Bureau of the Census changed the question on migration to pertain to a one year period in the 1950 Census and clarified the wording of the question. In the 1960 Census, a return was made to the question on place of residence five years earlier. Some differences in definition and categories of tabulation prevent complete comparability between the 1940 and 1960 data.<sup>1</sup>

The 1960 Census presents migration data for standard metropolitan statistical areas, urbanized areas, urban places of 10,000 or more and counties for all persons 5 years and over in 1960; tabulations are made for the following "migration classes":

- Same house as in 1960
- Different house in United States
  - Same county
  - Different county
  - Same state
  - Different state
- Abroad
- Moved, residence in 1955 not reported.

These tabulations were also carried out for nonwhites in selected areas.<sup>2</sup> All migration data described here and below are based on a 25-percent sample of the population.

For states and each city of 250,000 or more persons, migration is cross-

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<sup>1</sup>See United States Census of Population, 1960, Pennsylvania, General Social and Economic Characteristics, Final Report PC(1)-40C, U. S. Government Printing Office, Washington, D. C., 1962.

<sup>2</sup>The data are presented for the nonwhite population for only those SMSA's, urbanized areas, urban places of 10,000 or more and counties which contain 1,000 or more nonwhite persons.

classified by age (5-year classes); for states alone, migration is similarly cross-classified by age of civilian male veterans. The Bureau of the Census has also tabulated a considerable amount of data on a small area basis. Migration data in the form indicated above are published for each census tract in tracted areas. Such data as well as a wealth of other population and housing data have been tabulated and are available on magnetic computer tape for each census tract in tracted areas and outside tracted areas for each ward in cities of 25,000 or more, for urban places, and for the remainder of minor civil divisions.

One improvement in the wording of the Census question for eliciting migration data is perhaps worthy of mention. In decennial censuses earlier than 1960, there were numerous errors in reporting the previous residence by migrants. Most commonly, these errors took the form of the reporting of a city as the place of residence when in reality it was some smaller nearby community, urban or rural. Reasons for this type of response include ignorance and the tendency of the respondent to give simple answers to the enumerator. In 1960, if the respondent said that he lived in a different house on April 1, 1955, he was asked if he lived in a city or town on that date and in either case was asked whether he lived inside the city limits. As in the earlier censuses, the county of that place of residence was also determined.

The Census has collected data for over a century on the state of birth of the native population and has therefore been able to give migration information on movements from one state to another. Specifically, the data indicate the numbers of people who were living in different states from those in which they were born. Such data do not throw any light on intra-state migration nor on the number and nature of moves between birth and the time of the census. They have a number of other deficiencies and in general are not nearly so pertinent from the standpoint of use in economic studies of local and metropolitan areas as are the five year earlier residence data.

An innovation in the 1960 Census was a question on the year that the person moved into his present house (or apartment). The respondent specified the date of his move in essentially one year periods back to 1955 and in broader time spans in earlier periods.<sup>1</sup> The data resulting from this question can obviously be used to give considerable insight into population mobility. If estimates on in-migration into an area such as a city, however, were attempted from such data, a considerable amount of work would have to be done to adjust for intra-city migration, perhaps through the use of data such as changes in telephone listings. Substantial experimentation and testing will be required before the value of these census data for migration estimation can be firmly established.

Questions on migration have often been asked in the monthly Current Population Surveys, but of course, these surveys have not been designed to yield data for local communities or metropolitan areas.

The foregoing discussion concentrated on migration data which have

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<sup>1</sup>The "year moved into present house" code was, (check date of last move): in 1959 or 1960, in 1958, in 1957, April 1955 to December 1956, January 1954 to March 1955, 1950 to 1953, 1940 to 1949, 1939 or earlier, and always lived here.



been made available through federal auspices. As indicated earlier, such data have not been maintained in organized data collection systems at state and local levels.

### Composition and Characteristics of Population

Under data requirements, it was indicated that it would be desirable to have the specified information on the composition and characteristics of the population by decades back to 1920. The major source of these data, of course, is the U. S. Census of Population. A brief, general description follows on the geographic areas for which data on age, sex, race and color, nativity and school attendance of the population are presented. The availability of data on income, occupation, industrial composition and labor force are treated in other sections of this paper. Turning to the 1920 Census, we find that data on these characteristics are given at a sub-state level for counties, cities and boroughs of 10,000 or more, places of 2500 to 10,000 and for wards of cities of 50,000 or more. In general, the amount of detail shown in this and subsequent censuses is greater for larger places than for smaller. Various cross-classifications are shown such as a sex breakdown within parentage-nativity-color classes for these geographical areas. Essentially similar data were shown in the 1930 and 1940 Censuses with some variations in the particular cross-classifications given. In the 1940 Census, however, a question was introduced on educational attainment in addition to the earlier question on school attendance. Specifically, information was obtained on the last full grade of school, college or university, that persons 25 years old or over had completed. These new data were presented by various sub-state geographic areas, such as metropolitan districts, selected cities, counties, and so forth down to incorporated places of 2500 to 10,000 persons. Incidentally, about the only published characteristics of population data in this census on a ward basis (wards of cities of 50,000 or more) were figures on race and age, by sex.

In 1950 and 1960, essentially the same characteristics data were published for the same types of geographical areas with the exception that standard metropolitan areas were introduced in place of metropolitan districts and data on a census tract basis were published for the first time on a broad scale. Data on the characteristics referred to earlier as well as for others were shown by census tracts for those tracted cities, which in 1940, or in a subsequent special census prior to 1950, had a population of 50,000 or more.

A few problems arise with respect to comparability of age, sex, race and color, nativity, and school attendance data from census to census, but these difficulties are not so serious, of course, as for characteristics such as income, occupation, industrial composition, and labor force. A few of the typical problems might be cited, however. There were differing treatments of the "age unknown" category, differences before and after 1940 in the classification of Mexicans under race, differences in length of period to which the question on school attendance pertained, and so forth.

### Spatial Distribution of Population

Virtually all of the data on the spatial distribution of the population have been provided through the decennial censuses. Some of the definitional problems



concerning these data, therefore, merit mention here.<sup>1</sup>

It is difficult to obtain a precise picture of the changes over time in the distribution of population throughout metropolitan areas because of the shift in definition of such areas. Prior to the 1940 census, the concept of the "metropolitan district" was employed, with such a district being composed of minor civil divisions. The definition of the "district" depended primarily upon population density. The concept involved in "standard metropolitan areas," ("standard metropolitan statistical areas," abbreviated as SMSA, was the term used for the same concept in the 1960 census and is the one in current use), was that of a metropolitan community as distinct from the legally defined or physical city. Standard metropolitan statistical areas in most cases consist of numbers of whole counties. Metropolitan districts and standard metropolitan statistical areas are, therefore, not comparable. Some of the 1940 metropolitan districts lie outside standard metropolitan statistical areas and in some cases, metropolitan districts were split into two 1950 standard metropolitan areas.

Similar problems are present in tracing changes in the urban-rural composition of population. The 1940 and earlier definition of the urban population limited it to people dwelling in incorporated places of 2,500 or more persons and in other areas which qualified as urban under special population size and density rules. The 1950 and current concept, as indicated earlier utilizes a much broader definition including densely settled urban fringe areas and unincorporated places of 2500 or more persons outside urban fringes. Under the older definition, many sizable and built-up areas were not classified as urban. The Bureau of the Census feels that although there were other changes in the definition prior to 1940, that the data for 1940 and earlier are quite comparable. Data on "urbanized areas," since that concept was first employed in 1950, are, of course, only available from the 1950 and 1960 censuses. There were also certain changes in definition of the farm population in 1950 making for rather minor differences in rural-farm, rural non-farm comparability over time.

Insofar as determining spatial distributions among counties, cities, towns and so forth are concerned, comparability problems may be resolved by properly taking account of annexations and detachments. Population densities may be derived taking into account any such necessary areal adjustments.

Census data on housing and population can be effectively utilized for computing "holding capacities," particularly for small area segments. In many cases, municipal sources of data may prove to be extremely helpful in this connection.

#### Comparisons with Other Geographic Units

No detailing of availability of data discussed under the previous four headings for other areas such as the economic region, State and nation appears warranted. Where data are available for smaller geographical units, they are

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<sup>1</sup>These problems are discussed in the volumes entitled Characteristics of the Population in the various Censuses of Population. See particularly the 1950 and 1960 volumes.

generally either presented for the larger areas as well or may be obtained by aggregation. Problems may, of course, arise, where for specific purposes, economic regions are defined which differ from those for which data are conventionally presented.

### Characteristics of the Migrant Population

A general discussion was given earlier under "component rates of population change" of the nature of migration data made available in the 1940 and subsequent censuses. For the earlier of these censuses, a volume on color and sex of migrants was published in 1943 and three other volumes on the age, economic, and social characteristics of migrants appeared in 1946. The only data contained in these reports at a less than State level was for cities of 100,000 to 500,000 and for 500,000 or more.

The same pattern of publishing data on characteristics of migrants for relatively large areas has persisted through the 1960 census. However, considerable detail has been published in the 1960 census for State economic areas and standard metropolitan statistical areas of 250,000 or more population. For example, based on a 25 percent sample, the Bureau of the Census has furnished such data as the following for State economic areas: mobility status of the population and non-white population 5 years and over: 1960; in-migrants and out-migrants by color, with out-migrants by distance migrated: 1960; in-migrants, out-migrants, and estimated net migration: 1955 and 1960; age and sex of the population 5 years and over, of movers by type of mobility, and of out-migrants for State economic areas: 1960; age and sex of the non-white population 5 years and over, of movers by type of mobility: 1960; and so forth.

Since the paragraph above is the first point at which State economic areas have been mentioned, a definition of this very useful geographical unit will now be given.<sup>1</sup> State economic areas are geographical subdivisions of States grouped into relatively homogeneous units. These areas contain one or more counties with similar social and economic characteristics. According to the U. S. Bureau of the Census, "The name "State economic areas" has been given to this grouping of counties in order to convey the implication that each State has been divided into its principal units and that within each unit a distinctive economy prevails, insofar as it is possible to do this using county units."<sup>2</sup> Standard metropolitan statistical areas have been adopted as metropolitan State economic areas, with only a few exceptions.

For standard metropolitan statistical areas of 250,000 population or more the Bureau will publish such information as population 5 years old and over by metropolitan - nonmetropolitan residence in 1955 and color: 1960, characteristics of the population 5 years old and over by mobility status: 1960; age, education and place of destination of outmovers 5 years and over: 1960; employment status, occupation, family status, family income, and place of destination of out-movers 5 years old and over: 1960 and so forth.

For analysis of streams of migration for geographical areas smaller

<sup>1</sup>For a detailed description of the procedure used in setting up State economic areas, see U. S. Bureau of the Census, State Economic Areas, U. S. Government Printing Office, Washington, D. C., 1961.

<sup>2</sup>Ibid., page 1.



than those cited above, unpublished data and tabulations would have to be requested from the Bureau of the Census.<sup>1</sup>

### Current Population Estimation

The need for current population estimates in planning and development work for sub-State areas such as counties and cities is evidenced by the large number of planning commissions which engage in these estimation procedures and by the wide variety of methods which they and other agencies have brought to bear upon the problem. The Bureau of the Census conducts a program of current population estimation for the United States as a whole and for states, but it obviously does not possess the resources to carry out a regular program of population estimation for smaller areas such as counties and cities. Instead, it performs a clearing house function, in which it exchanges information on methods and sources of small area estimates prepared primarily by State agencies.

In Pennsylvania, the State agency which is most actively involved in the production of current population estimates for counties and cities is the State Planning Board. The availability of this agency's estimates has already been discussed. The most recent estimates of the State Planning Board have been quite timely, with July, 1961 population figures having been made available about ten months after that date.

Recently, the Bureau of Statistics of the Pennsylvania Department of Internal Affairs has engaged in some very interesting population estimation activities, in which it summarized information concerning county and municipal population estimating procedures and the estimates themselves and also produced some estimates of its own.<sup>2</sup> One very useful set of such figures produced by the Bureau of Statistics were county population estimates for Pennsylvania by age and sex as of July 1, 1958. These estimates are of particular interest because of the general lack of availability of information on characteristics of population for areas smaller than states other than from federal censuses and because they pertain to a date so far removed from the preceding census. The Bureau of Statistics used a "composite method" of estimation. A brief description of the method and its accuracy follows:<sup>3</sup>

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<sup>1</sup>See, for example, U. S. Bureau of the Census, Current Population Reports, Series P-25, No. 178, June 27, 1958.

<sup>2</sup>See Releases P-1, County and City Population Estimates for Pennsylvania, May, 1959; P-2, County Population Estimates for Pennsylvania by Age and Sex, February, 1960; P-3, County Population Estimates - Notes on Methodology, April, 1960; and P-4, Local Population Estimates in Pennsylvania, June, 1960, Bureau of Statistics, Department of Internal Affairs, Commonwealth of Pennsylvania.

<sup>3</sup>For a more complete description of the composite method, see Donald T. Bogue and Beverly Duncan, "A Composite Method for Estimating Postcensal Population of Small Areas by Age, Sex, and Color," Vital Statistics - Special Reports, Vol. 47, No. 6, U. S. Department of Health, Education and Welfare, National Office of Vital Statistics, August 24, 1959, and also the Bureau of Statistics, Pennsylvania Department of Internal Affairs Release P-2 referred to earlier and from which the above methodological description was derived.



The "composite method utilizes "symptomatic" or indicator" series to estimate the size of specific population segments. An attempt is made to use indicators which are most applicable to separate population groups. Typical indicator series include births, deaths, school enrollments, and so forth. No one of these series is completely sensitive to changes in total population and it is generally found that better results are obtained by aggregating estimates for the separate groups, (such as age groups), which have been derived through the use of the different symptomatic series than if any single indicator series were employed. The specific series used by the Bureau of Statistics were resident births, resident deaths, selective service registrants, and the Pennsylvania school census data. The population was subdivided into the following age-sex groups and separate population estimates were obtained for each of the groups:

- (1) 65 years and older by sex,
- (2) 45-64 years by sex,
- (3) 21-44 years by sex,
- (4) 18, 19, and 20 years by sex,
- (5) 6-17 years by single year of age, and
- (6) 0-5 years of age.

For the first group, those 65 years and over by sex, the population estimate for each county in 1958 was based on the assumption that the death censal ratio for the county age-sex group changed by the same percentage from the census year, 1950, to the estimate year, 1958 as did the corresponding nation's death censal ratio. The death censal ratio is simply the ratio of the population in the age-sex group for the given year to the number of deaths that occurred that year. The 1950 base population figures for this and other age groups were census enumeration data and the mortality figures were resident deaths. Specifically, multiplying the nation's 1958 death censal ratio relative to the 1950 figure by the corresponding 1950 county figure yielded an adjusted 1958 death censal ratio for the county. When this adjusted 1958 death censal ratio for (say) males 65 and over was applied to 1958 deaths in this age-sex group, a county population estimate for the group was obtained. A two year average of 1957-1958 deaths was used to smooth out erratic fluctuations.

A similar estimation procedure was used for the second population group, 45-64, by sex.

For the third group, 21-44 by sex, a completely analogous procedure was used, except that birth censal ratios rather than death censal ratios were employed.

The estimate of size of the fourth group population, 18, 19, and 20 years old by sex, was based primarily upon Selective Service registration data. Averages of 1957 and 1958 calendar year registrants were obtained to yield the number of 18 years olds as of July 1, 1958; similarly, averages of 1956 and 1957 registrants yielded number of 19 year old males and averages of 1955 and 1956 registrants gave the number of 20 year old males. County sex ratios by individual years were used to produce estimates of 18, 19, and 20 year old females. Current enlistment rates were used to adjust the number of 19 and 20 year olds.

Data for the fifth population group, 16-17 years by single years of age were obtained from the Pennsylvania school census.

The sixth and youngest age group, 0-5 years of age was estimated

primarily through the use of resident birth data. Such data were obtained for each of the six years prior to 1958 and were adjusted both for mortality and under-registration of births. Another adjustment was applied for migration, utilizing a migration rate computed from school census data.

The addition of the estimates for the six groups yielded total county population figures.

The Bureau of Statistics was not able to make the type of accuracy test for these estimates that it would have liked to because of the unavailability of county data on deaths by age and sex for 1940. The test method would estimate 1950 population on the basis of 1940 census data; a comparison would then be made with the 1950 census enumerations. Comparisons of the Pennsylvania Department of Public Instruction school census data with the corresponding 1950 census enumerations showed that the population for the ages 6-17 estimated by the school census were 97.7 percent of the corresponding Census of Population total. For age groups 6-7, 8-13, and 14, the estimates were within 0.6% of the corresponding census figure. For ages 15, 16, and 17, the school census estimates were about 3 percent, 7 percent and 17 percent, respectively below the Bureau of the Census figures. There was about a five month difference in the dates of these data which would explain a part of these differences.

The Bureau of Statistics also published in April, 1960 some very useful data by county covering the period 1950 to 1958 and giving estimates for 1958 on such matters as births, deaths, and natural increase; estimated number of children in a specified age group; population; change of population of long-stay institutions and schools of higher learning; estimates of population using the vital rates method, a modified vital rates method, Census Method II, and the Bureau of Statistics composite method; estimates of resident and total civilian population; components of change in population, comparative county net migration rates and rates of components of population change. In the modified vital rates method referred to above, the resident population is estimated rather than total population and the number of college students and persons in long-stay institutions is added to resident population estimates.

It is not felt worthwhile at this point to give a detailed description of the methods employed in obtaining the above data nor even in recounting a comparison of results obtained by the various methods. On the latter point, perhaps it suffices to indicate that there were substantial variations between county estimates based on the different methods. However, recent comparisons made by the Bureau of Statistics of the vital rates method and the Bureau of the Census Method II with recently published 1960 data will be discussed at a later point.

Because of its importance in local area current population estimation, a brief description of Census Method II will be now given, followed by a summary of population estimation procedures for counties and municipalities used by local agencies, (primarily planning commissions), and private organizations in Pennsylvania.

Method II of the Bureau of the Census can be classified as a "migration and natural increase" or "component" method. It has replaced an earlier and simpler technique, known as Method I, after a substantial amount of testing which demonstrated Method II to be superior. In Method II, separate estimates are obtained for the components of population change, net migration and natural increase. The starting point of the method is the last census population figure for the area. To be somewhat more specific, the civilian population is estimated



as of the last census date. To this figure is added an estimate of natural increase which occurred between the census date and estimate date. The estimate of natural increase is arrived at by adding an estimate of births and subtracting an estimate of civilian deaths. Next, an estimate of net civilian migration is added or subtracted. The basic method for the migration estimate is to construct a net migration rate for children 7-1/2 to 14-1/2 years of age through the use of the last census and school enrollment figures for elementary school grades 2 to 8; a factor developed by the Bureau of the Census is used as a multiplier against this children's migration rate to estimate a migration rate for the entire population; the resulting rate is then applied to the figure for the entire civilian population as of the last census date to yield an estimate of net civilian migration since the last census. The children's net migration rate is arrived at by measuring the difference between observed and expected elementary school enrollments; the expected enrollments are the expected numbers of children surviving since the last census date by age groups. A subtraction or addition is then made for the net gain or loss of civilians into the Armed Forces. This yields a figure for the estimated civilian population on the estimated date. A final addition of military personnel stationed in the area yields a total population estimate.

The Bureau of the Census, in an attempt to simplify the procedure has introduced some short cuts.<sup>1</sup> These have been primarily in the nature of time saving devices and a simplification which obviates the necessity of manipulating life table functions in computing expected survivals.

A number of data problems which arise through application of Method II warrant mention. In obtaining natural increase estimates, adjustments are sometimes necessary for conversion of place of occurrence birth and death data to place of residence. Also, adjustments for incompleteness of birth and death registration may have to be applied. Much more important, however, are data problems in estimating net migration. The Bureau of the Census points out a number of deficiencies in using school statistics for this purpose. Data on enrollment by age are preferable to enrollments by grade. Average daily attendance figures are usually unsuitable. Furthermore, on the basis of wide experience, the Bureau of the Census suggests that school census data generally are seriously inadequate for population estimation purposes. There is considerable year-to-year variation in adequacy. The enumerations are usually not up to the standards of well organized federal census procedures, and sometimes the data are available for school districts which are not in conformity with city or county boundaries. Further problems arise out of the necessity to include private and parochial school figures.

Adjustments are required for underenumeration of the population under 5 years of age; estimates must be made to obtain single year of age figures where the census does not give these data and the local estimator will probably have to modify the migration factor provided by the Bureau of the Census since that organization does not have such factors for counties or cities. Despite all of the above-mentioned problems, however, Method II and other varieties of migration-and-natural-increase and composite methods are generally considered among the better methods of population estimation, since they try to make complete use of current data indicating recent pop-

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<sup>1</sup>See U. S. Bureau of the Census, Current Population Reports, Series P-25, No. 133, March 16, 1956.



ulation changes. In various tests of accuracy of different methods of State and local population estimates carried out by the Bureau of the Census a few years ago, the Bureau's Method II yielded smaller average errors than any of five other basic methods (Method I, vital rates, natural increase, arithmetic projection, and geometric projection.)<sup>1</sup>

Recent tests carried out by the Bureau of Statistics, Department of Internal Affairs in Pennsylvania however, indicated that the vital rates method provided estimates for county populations in Pennsylvania which were considerably more accurate than Bureau of the Census Method II estimates.<sup>2</sup> The tests involved projections of 1950 county populations to 1960 by the two methods and comparisons with 1960 census population enumerations. Method II estimates were made with and without controlling State totals to equal the Bureau of the Census figure for Pennsylvania. Also, Method II procedures were modified somewhat because of the absence of comparable and consistent school enrollment data for 1950. In the vital rates method, estimates were made with and without adjustments in county censal ratios for under-registration of births and for changes in State and national birth and death rates. A particularly interesting result was that every introduction of adjustment factors to the unadjusted vital rates estimates produced inferior results. Of course, considerably more testing would be required to establish the superiority of this unadjusted method and to assure the consistency and persistence of the pattern observed.

There is a growing amount of published material on various methods of population estimation and their accuracy. Some techniques that work well in certain areas do not perform well in others. Many methods have simply not been adequately tested. Frequently, combinations of methods work better than individual methods. Local estimators are usually in the best position to assess local sources of data and may be aware of data that exists in their own localities that are not present in others. The Bureau of Statistics, Department of Internal Affairs of Pennsylvania carried out a study in 1960 of the methods then in use by local agencies and private organizations in that State for the estimation of population for municipalities and counties. Some of the methods are not current population estimation techniques, but are population projection methods. Most of the agencies were planning commissions and most of the private organizations were planning consulting firms. Only very brief citations are given of the techniques employed, but it is clear that a wide variety of methods and data are employed in local population estimation in Pennsylvania. No attempt was made in the Bureau's study to evaluate the estimation methods or data. A brief description of the methods follows.

Methods of estimation and projection were listed as being used within 32 of the 67 counties of Pennsylvania. No doubt, population estimation is being carried out in most if not all of the other counties as well. Most of the estimates were for cities, townships, boroughs, and counties. The Bureau of Statistics classified the estimation methods into five basic groups: (1) constant rate of growth, (2) statistical series sensitive to change, (3) school enrollment data, (4) dwelling units, and (5) projections based on assumed economic development. In the first method, "constant rate of growth," simple extrapolations of observed rates of change in population for the last decade or two were made for years during the decade from 1950 to 1960. Annual rates were

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<sup>1</sup>op. cit., page 2.

<sup>2</sup>Report on Tests Made of Vital Rates and Census II Methods of Estimating County Population, Bureau of Statistics, Department of Internal Affairs, Commonwealth of Pennsylvania, unpublished memorandum, 1962.

applied to 1950 census figures to obtain postcensal estimates. The second method, "statistical series sensitive to change," utilized changes in numbers of buildings being constructed (permits), changes in numbers of utility connections, and birth to death ratios to produce estimates of population change. The third method, "school enrollment data" appears simply to be a "migration and natural increase" method utilizing school enrollment data. Census Method II was explicitly listed under several counties. The "dwelling units" method used either occupied dwelling units -- all dwelling units occupied at the estimate date or completed units -- those completed and ready for occupancy. A multiplication of these figures by estimated average number of persons per dwelling unit yielded the total population estimate. The fifth method, "projections based on assumed economic development," as the name implies, is based upon the principle that economic growth exerts a strong influence in determining the population of an area. Anticipated industrial expansion, land availability for future development purposes and similar factors are basic considerations in this method.

Actually, the wide variety of techniques employed by the local agencies and consultants surveyed by the Bureau of Statistics is not completely described even by the above list. For example, one planning commission reported its method as a simple one percent downward adjustment of the State Planning Board estimate; a consultant reported his estimating technique for a city and corresponding metropolitan area as an average of seven different methods; tax censuses and tax records were occasionally cited as elements of the method; and the Philadelphia Urban Traffic and Transportation Board reported a technique "based on "gravity model" of population dispersion which measures density, distance and growth relationship between Philadelphia and the surrounding counties." At least one agency referred to an apportionment (proration) technique. In this method, ordinarily an estimate for a larger area such as the State (provided by the Bureau of the Census) is distributed according to "symptomatic" data such as births, deaths or school enrollments or on the basis of local area populations at the time of the previous census.

In reporting the date of the latest estimates, most of the agencies and consultants indicated a time within one or two years of the date of the survey although several went back three or four years.

An indication of the recognition by many townships and boroughs in Pennsylvania of the inadequacies of postcensal population estimates for many purposes was a list of 130 such municipalities which had special censuses conducted from 1956 through 1959.

It is obviously impractical even to attempt to catalog the availability of all current population estimates and procedures for estimation used for urban planning purposes in Pennsylvania and no such attempt is made in this paper. The broad variety of such estimation by municipal, county and State agencies has been indicated. Since much interest inheres in estimates for economic regions such as the Standard Metropolitan Statistical Areas, however, and since the largest metropolitan region in Pennsylvania, namely Philadelphia, spills over into New Jersey, a brief mention will be made at this point of current population estimation and related activities at the State level in New Jersey.

The Research and Statistics Section of the New Jersey Department of Conservation and Economic Development, Division of Resource Development began systematic annual estimation of population for counties and each of the



568 municipalities or minor civil divisions in 1954 and published such estimates for 1955 through 1958. Similar estimates were prepared for 1950 and 1960 prior to the availability of the federal census data but were not published. The Research and Statistics Section reports that it has no plans for further public population estimates at the present time. It appears probable, however, that needs for current population estimation will soon make themselves felt and that the Section will resume its publication of current estimates. The difficulties in the area of current population estimation are exemplified by the fact that this Section feels that it has no technique at present which would provide adequate estimates. The results of recent attempts by a private consultant for the Section utilizing a wide variety of indicators were not considered satisfactory. The only population data presently available, therefore, are those of the 1960 federal census. Current population estimates are not presently available for 1961 and 1962.

The estimation technique used for the 1955-1958 period is described as "based primarily upon births, deaths, and building permits issued for new dwelling units after adjustments for seasonal housing. Net changes in these factors have been applied to the 1950 Census population figures, thus up-dating the Census to present levels."<sup>1</sup> The Department has also compiled population totals given in the Censuses of 1930, 1940, 1950 and 1960 for all municipalities and counties. Tabulations are presented on trends in individual county populations from 1880 through 1920, changes in densities and the distribution of urban and rural counties. County data sheets present population totals by county and year from 1950 to 1960. Based primarily on recent census data, various population characteristics have been summarized for counties and municipalities including density ratings, migration patterns, sex and race, institutional population, number of households and persons per household.

Projections of population have been provided by the Department for each of the counties by five year periods from 1960 to 1990. These were based upon the 1950-1960 federal census data. Rates of increase were calculated for each county and extrapolated on the basis of subjective judgments on anticipated changes in the rate of increase. The estimates were produced by applying these estimated rates to 1960 base populations. The usual vital events data are provided by the New Jersey State Department of Health for counties and major municipalities. Population estimates presented by the Department of Health for those geographical areas for 1961 and 1962 were based on the assumption that the average yearly change between the 1950 and 1960 censuses continued to 1962; annual intercensal estimates for the years from 1950 and 1960 have recently been made for counties and major municipalities by arithmetic linear interpolations between the two census date populations. More detailed population data and estimates are, of course, available from various local and county agencies and planning commissions.

The most effective method of obtaining current population information is through well conducted censuses. Mention has already been made of the many special censuses carried out by the Bureau of the Census upon local request. Also indicated earlier was the fact that school censuses locally conducted have been found to possess serious limitations for current population estimation purposes. There is not much point in dwelling on the limitations

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<sup>1</sup>New Jersey Population Estimates, 1958, State of New Jersey Department of Conservation and Economic Development, Trenton, N. J., 1959.



of school census data for purposes for which such figures were not basically designed. In a more constructive vein, a brief report will now be given on a very interesting experiment in Bucks County on the establishment of a much wider information system, of which the collection of the legally required school census figures is a part.

As a joint venture of local school districts and the county planning commission, censuses have been carried out in Bucks County since 1960 for a target universe of the total population rather than for school age children only.<sup>1</sup> All data required under the school code are obtained plus a considerable quantity of additional information. An attempt is made to conduct an enumeration for approximately one-third of the county every year, thus complying with the State requirement of a school census once every three years. Another target universe consists of all parcels of land within the county. These are enumerated and information concerning them is obtained at the same time that the population census is carried out. The data obtained are punched into IBM cards and are kept in a County Data Processing Center.

The enumerator has a card for each parcel of land. He is given a map specifying the location, property lines and identifying number of every parcel. The cards are pre-punched with identifying number of parcel, enumeration area number, name of present owner and in some cases number and street address. Information is recorded by the enumerator on all children and adults, and type and condition of housing. The head of the household is specified, and the following items are noted for all adults: name, date of birth, place of residence at birth, sex, ethnic group or race, years of education, relationship to head, employer, place of work, the type of transportation most frequently used in going to work, occupation and a number of other items including such "household information" as the location of the store where weekly food shopping is most frequently done and home-tenure status. For children, all of the legally required information is obtained plus additional items as well. Information on the nature of dwelling unit including the general condition of the building, the number of baths, total number of rooms and so forth are indicated and if the parcel is utilized for other than residential purposes, the land uses are specified in conventional categories.

The county planning commission maintains a complete deck of cards for all school districts. Each of the school district superintendents maintains a deck for his jurisdiction for operational purposes during the school year. The continuation of the census in the off-two year periods is accomplished in varying ways in the different districts. These districts usually carry out their responsibility of maintaining accurate information in the interim periods by completing information cards on any new school enrollments by transfer (migration) and by checking new homes built during the summer period. The county planning commission has taken the responsibility of obtaining from the county Department of Public Health information on births to county residents.

Information obtained between census enumerations is periodically gang-punched by the county. Major punching and tabulating equipment is centrally located, although there is a certain amount of decentralization of sorting equip-

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<sup>1</sup>This system of data collection was actually started in 1955, but not all school districts were covered. In 1960, the data processing system was introduced and all school districts were brought under the program.

ment for school district use. A number of steps have been taken to keep the data accurate and current.<sup>1</sup> The Bucks County School Administrators have appointed a permanent census committee which is working with the County Planning Commission and the County Board of Assessment and Revision of Taxes in reviewing and recommending improvements and modifications of the program. Information required by the schools, the County Assessor and for planning purposes is obtained through a single integrated field process. The school board which collects the occupational tax in each district, appoints a census coordinator whose responsibility is to supervise the collection and correction of data. He oversees the transmission of accurate information into the card file and also into the office of the County Assessor.

This type of population data program has some very useful potentialities. It provides the basis for determining on an annual basis the total size of population, and for analyzing the qualitative nature of the population such as its characteristic, composition and geographic distribution. When such data are combined with the land use information obtained, they make possible a rich, broad spectrum of current analyses and future projections for planning and development purposes.

Furthermore, certain kinds of information are potentially obtainable from this type of system that are only arrived at with extreme difficulty otherwise. For example, for many purposes, employment data by place of residence rather than by place of employment are required. Particularly useful are labor force distributions by occupation and by type of industry. Since most employment data come from employer respondents, they are generally available by place of employment. Thus, the often difficult adjustment for the commutation problem arises. Also, as is indicated in the next chapter, since employment data often arise as by-products of administrative systems, such as unemployment compensation or social security, they tend to cover only a portion of the desired universe. Again, troublesome problems of additional estimation and adjustment confront the investigator. Data collection systems geared to the residents of a community as respondents could potentially obviate many of these difficulties.

It is clear that small area population projections can be made on a much firmer base if current population breakdowns by pertinent characteristics are available. Such current data also eliminate the necessity for elaborate and often quite tenuous postcensal population estimation procedures.

It might be noted at this point that the existence of school per capita taxes and, as in Bucks County, of an occupational tax provides a strong administrative incentive for obtaining the type of data mentioned above.

Another interesting system for the provision of current population data is found in the City of Easton, Pennsylvania. An annual school census is conducted by high school teachers. A manual tabulation card is kept for each family and address. Occupational data for the head of the family are quite incomplete, consisting only of employer's establishment, not occupation of employee. Age data are recorded for those over 21 years; age, date of birth and grade in school are maintained for children. The interesting aspect of the

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<sup>1</sup>See Planning Progress, Bucks County Planning Commission, No. 27, May, 1962.



system is the way that migration data are obtained. By a city tax ordinance, permits are required from the Police Department to move household goods from any place within Easton to another place within the city or outside. Therefore, a direct enumeration can be made of out-migration from the city and internal migration within the city. Also records are kept on when the family moved into the dwelling unit it currently occupies. An attempt is made to update the card file every fifteen days by the obtaining of moving permit data from the Treasurer's office and through public notices on births and deaths. Consumer credit reports obtained through local credit bureaus are also used to check data on movements in and out of the community. Registrations for payment of school taxes are used as an aid in detecting movements into the community.

Because the population data collection systems alluded to in the two illustrations above are partially by-products of administrative tax systems, in particular areas, they can not be used by all municipalities or counties. The illustrations, however, are indicative of the wide array of data that can be utilized for the provision of current population information. Current population estimation for local areas is a many-faceted, complex, unsolved problem and each area must seek out the system which is best for it, in the light of its own data requirements, availability and problems.

### Population Projections and Forecasts

A few comments on the availability of population projections and forecasts for planning purposes in Pennsylvania are perhaps pertinent. Many local agencies and planning commissions have produced projections by a wide variety of methods and find these estimates essential in planning their development and operational activities. In connection with the economic base surveys carried out under Urban Planning Assistance Project ("701") Grants from the Federal Housing and Home Finance Agency which were described in an earlier report,<sup>1</sup> the standard procedure in both "local 701" or "regional 701" studies was to produce a separate population study prior to the economic analysis or to carry out the two studies simultaneously. As previously indicated, one approach was to arrive at various sets of projections based upon extensions of historical trends in the demographic data themselves and then later to revise these into the form of forecasts when the economic analysis was completed. As indicative of the types of predictions carried out, a couple of specific examples will be given from typical studies carried out by planning commissions.

The Fayette County Planning and Zoning Commission in a population study published in 1958, which was the initial report in a comprehensive plan series derived high, medium and low estimates of county population for 1960, 1970 and 1980 by five-year age-sex groups and also distributed total population among the major areas (municipalities) of the county.<sup>2</sup> It used an analytical method which separately estimated net natural increase and migration under assumptions concerning future birth and survival rates, labor force participa-

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<sup>1</sup>Hamburg, Morris, Economic Base Studies for Urban Planning and Development in Pennsylvania, Department of Internal Affairs, Commonwealth of Pennsylvania, April, 1962.

<sup>2</sup>Population in Fayette County, Pennsylvania, Fayette County Planning and Zoning Commission, 1958.



tion rates, employed labor force and percent unemployed. Rates were obtained for projection purposes, basically by utilizing the most recent ratio of the county to larger areas and assuming these ratios would hold into the future. For example, estimated birth rates were obtained by using the 1954 ratios of the county to the United States for each female fertile age group and applying these ratios to estimated future United States birth rates given by the Bureau of the Census in its Current Population Reports. The U. S. rates given in four series were combined into three and high, medium and low birth rates for the county by five year periods from 1950 to 1975 were obtained and extrapolated to 1980. Analogous procedures were followed for survival rates and labor force participation rates, using county to State of Pennsylvania ratios. Labor force migration was estimated to 1960 by taking the difference between the labor force that would have resulted from the survived population before migration and the estimated size of the labor force in 1960. Application of a factor based on past trends converted labor force migration to total migration. Migrants were distributed into age-sex groups and were subtracted from age-sex population survived from 1950 to 1960. High, medium and low projections of total population for 1960 were the final product. The 1970 and 1980 population estimates were similarly derived using age-sex group survivals by five year periods and adding in survived births. Migrants were subtracted for each 10-year period. The study recognized assumptions in its projections ranging from, "The high series is based on the passage of federal legislation to assist labor surplus areas, a vigorous comprehensive program of industrial development both on the County and Local level, and the successfulness of the planning program" to, "The low series is based on normal local, state and national trends, with the County not exerting itself concerning industrial development and having little success in attracting new industry, a rapid advance in atomic power without coal reserves being needed to supply that power and with little success in the planning program."

By an essentially similar method, the Central Westmoreland Regional Planning Commission in a population report for the Greater Greensburg Planning Area in 1959 produced population estimates by age-sex groups to 1980.<sup>1</sup> However, there was no intermediate step of labor force migration estimation nor were separate estimates for the component municipalities of the planning area attempted. A number of different methods were used for projection of total population to aid in establishing a reasonable range. These methods included constant arithmetic and geometric projections of past trends and estimates based on percentages of the United States, Pennsylvania, and the Pittsburgh Standard Metropolitan Area. The authors of the report noted the preliminary nature of all of the projections and indicated the necessity of adjustments after planning recommendations in the Master Plan were more firmly established. They further pointed out that, "Obviously, the extent of land available for industry and residential development, and the ability of the community to pay for services, will have direct bearing on the population which may be expected in the area."

It is clear that population projections of the type indicated above have been produced at local and regional levels. One of the most recent evidences of concern about population projection by the State of Pennsylvania has been the granting of a contract to Temple University by the State Planning Board to

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<sup>1</sup>Population, Greater Greensburg Planning Area Master Plan, Central Westmoreland Regional Planning Commission, 1959.

carry out such projections for the counties of Pennsylvania. These projections have been prepared for five year intervals running from 1965 to 1980. The figures are given by sex and age for five year cohort groups. For the fifteen counties where the non-white population was 2 percent or more of the total population according to the 1960 census, separate breakdowns by race are shown. It is perhaps worth repeating at this point that these types of projections were indicated earlier as being among the most frequently requested statistical items of information from the State Planning Board.

## Evaluation of Data Requirements Versus Availability

Now that statements have been given on population data requirements and the availability of such data for the purpose of the preparation of economic base studies in urban areas, an evaluation is needed as to how well the needs are met by the existing information system. As pointed out by the Federal Statistics Users' Conference in its study of possible improvement in the federal statistics program, there does not exist any single set of criteria for the evaluation of statistics programs.<sup>1</sup> In general, a data information program for urban areas should meet many of the standard criteria of any good statistical program, such as flexibility. That is, it should possess the capability of changing to meet new methods of problem solution; it should serve a multiplicity of needs rather than being oriented toward too narrowly conceived purposes; and it should be pointed toward providing the most important data needs. Since there will always be a wide variety of claims upon the scarce resources of the system, it is particularly important to perceive and serve the high priority needs.

Population data of various sorts have been collected for a long time. It is undoubtedly safe to say that population data collection systems have not been oriented particularly toward urban economic analysis. It is not surprising, therefore, that when looked at from the latter standpoint, numerous gaps and areas of data improvement can be observed. The discussion below begins with a comparison of population data requirements with availability as each of these was earlier set forth primarily as regards historical data, then considers current population estimation and projection programs. In this context, the term "data" is to be construed rather broadly to include historical statistics, current estimates and future projections and forecasts.

### Levels and Rates of Change of Total Population

Insofar as the study of levels and rates of change of total population is concerned, historical long run data provided by the U. S. Census of Population are reasonably adequate for economic base study purposes. That is, the data are generally available on a county and municipality basis at decade intervals and are reasonably comparable except for problems such as modifications of county and municipality boundaries and changes in tabulations of persons according to place of residence. Although the broad outlines of historical growth and decline in population can be traced fairly well for counties and municipalities, availability of recent population data is ordinarily a serious problem for economic base study analysis. At points of time such as the present, that is, within two or three years from the census date, the preceding census generally provides a good benchmark statistic from which to make current population estimates. Obviously the rate of obsolescence of these benchmark data increases rapidly as we move further away from the census date. Returning to the matter of tracing trends in population change, we note a general failure to meet the specification of data on an annual basis since 1950. Quite clearly this is a rather arbitrary requirement and one perhaps not to be taken too seriously in every case, but the spirit of this requirement plainly is to pinpoint the need for relatively continuous recent population data to permit the detection and

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<sup>1</sup>A Long Range Program for the Improvement of Federal Statistics, Federal Statistics Users' Conference, Washington, D. C., undated.



understanding of changes or departures from earlier established longer run patterns. This would be particularly true in rapidly urbanizing areas or areas generally undergoing quick moving changes in physical, social, economic and industrial character.

Many areas have attempted to meet their needs for intercensal population statistics by special censuses financed by local resources. This has tended to create a situation of rather spotty, unsystematic availability of population data, not only on total population, but on characteristics, composition and distribution as well. It is not at all clear that the communities needing censuses most will be the ones that will have them carried out. Furthermore, although a special census may meet the needs of say, a local planning or development agency, a collection of scattered special censuses throughout a metropolitan region may be seriously inadequate from the standpoint of regional planning activity.

The problems of unevenness and lack of timeliness in availability of local or county area population data are particularly acute. Many planning agencies, of course, have current population estimation programs; activities in Pennsylvania in this field by the State Planning agency have been referred to earlier. However, many organizations and agencies throughout the country testified at the recent congressional hearings on the mid-decade census concerning the inadequacy of their own and other estimates of local populations. Data derived from the 1950 census in many cases proved to be obsolete in a very few years. Taking into account a roughly two year period for the publication of the 1960 census figures, prior to the publication of these data, analysts were sometimes using benchmark data that were almost twelve years old and yet represented the most recent census statistics. Some investigators indicated that they simply ceased using census data when they were more than four or five years old.

In connection with planning and development activities in the area of residential housing, population data on a household or family basis are particularly required. Insofar as the difficulties and problems recited above are concerned, they are even worse for household and family data than for total numbers of persons. There are more difficulties as regards change of definition in the historical series, and current population estimation programs are particularly geared toward numbers of persons rather than numbers and average size of households. There is, therefore, a general lack of reliable household data in intercensal periods.

A separate discussion of the adequacy of current population estimation and projection programs is included at a later point, but one comment is perhaps appropriate here. There are at the present time a wide variety of State, local, and other agencies producing regional, county and local population estimates and projections for planning and other purposes. There is ample room for improvement in data sources, methodology, and stemming from these, accuracy and reliability of the estimates.

#### Component Rates of Population Change

There are substantial discrepancies between data requirements and availability of information on the component rates of population, namely, natural increase and net migration. It was stated earlier that it would be desirable to have annual data on births and deaths back to 1920. Although the Pennsylvania Department of Health has been publishing data on a county basis since 1906 on deaths

and since 1915 on births and these data have been available on an unpublished basis for civil divisions with more than 10,000 population since these dates, appropriate comparable figures are simply not available over that time span. However, it is extremely helpful that the Department has found it possible to rework its time series figures back to 1937 on an allocation by place of residence basis. Furthermore, the new availability of birth and death information on punch cards for incorporated civil divisions of the Commonwealth is an important improvement stemming from the changes in the reporting forms made in 1959.

It would be extremely useful for planning purposes to be able to trace movements in specific birth and death rates for relevant subgroups of the population in the planning area. However, as noted earlier, although age-specific death rates and birth rates have been tabulated for Pennsylvania as a whole, such data have not been prepared for counties or municipalities. The requirement of having population counts by age, sex, color and possibly other characteristics as the denominators of such rates means that for practical purposes such data are available for these smaller areas in Pennsylvania only at decennial census periods. Considerable improvement could be made in this particular area of population estimation. Bogue and Duncan have presented a method for the estimation of numbers in segments of the population for small areas.<sup>1</sup> The method and principles involved were developed as part of a program to provide current population estimates for all counties and cities of 10,000 or more persons in the State of Illinois. Although there have been no definitive specifications of estimation error in the use of this technique for small areas, the method does show considerable promise. It seems reasonable that similar population research programs should be carried out in Pennsylvania.

The really major gap in information on components of population change is the lack of data on migration. Many authorities consulted in the course of this study emphasized the serious lack of knowledge of the spatial mobility of the population and that this information was absolutely essential in the planning process. Insofar as historical figures on migration are concerned, apart from Current Population Survey data which are not designed to yield metropolitan or smaller area information, and apart from local special censuses or occasional special studies such as that of the Bureau of Statistics, Pennsylvania Department of Internal Affairs in 1960 which gave comparative county net migration rates by years from 1950 to 1958, the decennial census tabulations on the five or one year earlier place of residence represent about all that is available. The publication program for 1960 is the most complete one of the three censuses beginning in 1940 in which migration data were collected. Several years pass, however, before detailed cross tabulation data are published, which indicates the serious problem of obtaining timely published data, even from federal sources. The fact that the Census Bureau has made available, for the first time in the 1960 Census, data concerning population and housing on magnetic tapes for each of the 272,000 enumeration districts of the United States, adds tremendously to the possibilities of not only migration analysis within and among metropolitan areas but to the whole range of general population analysis as well. There are numerous problems involved, however, in the utilization of these tapes by agencies such as city or county planning commissions. The tapes are compatible with the Univac, Model 1105. For other types of computers transfer of information to tape or cards is required. Detailed planning and sub-

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<sup>1</sup>Bogue and Duncan, loc. cit., August, 1959.



stantial resources are required for the construction and "debugging" of computer programs.<sup>1</sup> The magnitude and complexity of the operations involved in the detailed processing of such tapes by a large city planning department which utilizes such information in its Master Planning processes have been cited by Evelyn S. Mann, of the New York Department of City Planning in a recent article.<sup>2</sup> The vast and varied requirements of large numbers of planning and other agencies within a metropolitan region for data of the type discussed above highlights one of the functions which could be performed by the type of metropolitan area data service recommended by Professors Alderson and Shapiro, referred to earlier in this paper. Regional data services could undertake the responsibility of processing local area census data and could provide the necessary clearing house functions for the coordination and elimination of duplication in the programs and data processing needs of the various planning agencies.

The problem of the provision of adequate data on migration for urban planning purposes is sufficiently important and complex so that serious investigation of a variety of alternatives is called for. Despite the serious current inadequacies of school census data, the expansion and improvement of such enumerations into an annual complete census of the population and its characteristics in the direction implied by the combined program of the Bucks County Planning Commission and the local school districts has the potentiality of improving in a revolutionary way small area population statistics for Pennsylvania. Perhaps such a program is not feasible in other counties. Then, the collection and utilization of other types of data could bear investigation. For example, the use of data on migration derived as by-products of the operation of city tax ordinances which require the obtaining of moving permits such as was described for the city of Easton is worth investigating in other municipalities where such legislation may be in existence. No doubt, indirect measures of net migration such as are furnished by population estimation techniques of the Census Bureau Method II type will continue to be developed and improved. Better direct and more frequent collections of data appear to be needed to furnish sorely needed information on the flow of population from central city to suburban areas and other movements across relevant areal boundaries. Expanded and improved programs of sample surveys and special local enumerations could be particularly helpful in this respect, as well as in furnishing other population data as well. A continuing committee or conference of State personnel, federal Census Bureau officials and representatives of other interested agencies in Pennsylvania and perhaps New Jersey would be extremely useful in planning and phasing such surveys.

### Composition and Characteristics of Population

Information on the natural characteristics of the population, such as age, sex, race and nativity are available primarily from the U. S. Bureau of the Census. The historical requirement of such data on a decade basis for county

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<sup>1</sup>See Olds, Edwin B., "The Use of Census Bureau Magnetic Tapes in the Washington Area's Metropolitan Population Project," Papers Presented at the Census Tract Conference, Bureau of the Census, U. S. Department of Commerce, December 28, 1961.

<sup>2</sup>Ibid., Mann, Evelyn S., "Experience in the Development of a Program of Analysis Utilizing 1960 Census Tapes," 1961.



and local areas for economic base study purposes is reasonably well met by available census data. The deficiencies in availability of such data are for descriptions of the current population and for reasonably frequent data, perhaps on an annual basis since, say, about 1950. In a period only two or three years after the decennial census year, the preceding census in most cases provides adequate descriptive data on the natural characteristics and composition of the population. The further the distance from the census year, however, the greater are the difficulties in the use of decennial census figures. There is, of course, considerable interaction between migration and composition of population. The characteristics of population in metropolitan areas have changed considerably in recent years largely because of differential population movements. Large cities such as Philadelphia have experienced a great influx of Negroes from the South and an out-migration of middle income whites to the surrounding suburbs. Shifts in population composition, furthermore, considerably influence future demographic characteristics of the population. For example, a shift to a distribution consisting of large proportions of younger persons of relatively higher social and economic status would tend to a decrease in death rates.

A number of the experts who testified at the recent congressional hearings on the mid-decade census felt that the type of small area data required on population characteristics for planning purposes could only be obtained by actual nose counts of the population. These experts tended to support, therefore, a population census, with varying degrees of detail every five years, rather than every ten years. There is little question that the establishment of quinquennial censuses would be the most effective method of providing data on the composition and characteristics of population with the accuracy desired for planning and development purposes for urban areas and communities within these areas. However, more effective current population estimation programs are also needed which will utilize currently available data for population estimation. Births and deaths are available on an annual basis classified by age, sex and color. Estimates of the school age population using variations of the "school-enrollment" technique of the Bureau of the Census and associated methods of distribution of this population by sex and color may for certain areas provide useable data. As Bogue and Duncan point out, often school-enrollment figures may be unreliable and unmanageable for this type of population estimation. Nevertheless, since the three types of data indicated are very sensitive indicators of population size for particular age groups of the population, together cover almost the entire life span, and much of the data are carefully collected for small sub-State areas, much more experimentation with the estimation of population composition for regional and local planning areas in Pennsylvania appears warranted.

The evaluation of available data on economic characteristics of the population, such as employment and income is given in other chapters of this paper.

### Spatial Distribution of the Population and Comparisons with Other Geographic Units

Many of the data deficiencies and gaps mentioned under earlier headings are pertinent for analysis of the spatial distribution of the population and for comparisons with other geographic units. Again, about the only historical data available are those of the federal Census Bureau. Historical studies of shifts in population distribution as among metropolitan and non-metropolitan areas are

hampered by definitional changes in the meaning of terms designating these areas and of terms pertinent to urban-rural classifications. The change to the new definition of urbanized population which includes densely settled urban fringe areas is undoubtedly a desirable one from the standpoint of obtaining realistic measures of metropolitan growth. However, the earlier discussion of problems concerning the lack of availability of suitable annual population data means that postcensal changes in population distribution among and within metropolitan and non-metropolitan regions are exceedingly difficult to measure accurately. Since there are so many different types of population estimates using a variety of techniques produced by county, local and other agencies and since there have been special censuses carried out for only certain local areas, comparability of data is a vexing problem in attempts to build up metropolitan regional estimates, or for comparison of an area with surrounding communities, communities of similar size, the economic region and so forth. Furthermore, as the decennial census year recedes in time, it becomes increasingly difficult to obtain data on the distribution of population among small area segments such as census tracts or planning areas within a municipality. While useful total population estimates may be produced for counties or municipalities on a periodic basis, such estimates may simply not provide sufficient geographic detail for a variety of planning and development purposes.

### Characteristics of the Migrant Population

Although federal Census data on the migrant population have only been collected since 1940 and therefore adequate historical studies are not feasible, by the 1960 Census, a wide variety of improved data on the mobility of the population and the characteristics of migrants was available. In late 1962, however, the 1960 census volumes on population mobility had not as yet been published. A further problem from the standpoint of local area planning analysis is that much of the published data on characteristics of migrants are for relatively large geographic regions such as states and larger divisions. Nevertheless, the tabulations for 1960 include information on origin and destination of migrants by sex between state economic areas, similar locational data for non-white in-and-out migrants, and age and sex of movers by type of mobility and out-migrants for state economic areas of specified size. Data on characteristics of migrants are also planned for publication for standard metropolitan statistical areas of 250,000 or more. These tabulations will include the mobility status of the population by such breakdowns as age by sex and color, education by color, employment status by color and sex, family status and family income in 1959. As indicated earlier in the section on data availability, migration data based on 1955 residence are published on a small area basis - namely, for each census tract in tracted areas and are available on magnetic computer tape for such areas as wards of cities, urban places, and for the remainder of minor civil divisions. It seems fair, however, to state that for economic base study connected purposes, especially for planning commissions outside of the largest metropolitan areas, data on the characteristics of the migrant population are not readily available, even from the 1960 census. It would be extremely useful to planners to have detailed data on the types of people migrating in and out of their communities, the reasons for this mobility, and the extent to which it changes the composition of the population in the planning area. It does not appear feasible at present for the Bureau of the Census to expand publication of characteristics of migrants data down to county, municipal or even smaller area bases. It is not clear that the benefits would exceed or even be as great as the costs of such a large scale publication program. Also, it is clear that



many local planning commissions are not able currently, for one reason or another, to make maximum use of the magnetic computer tape information which is available. Again, this situation seems to point to the possible advantages of metropolitan area regional data centers which would have the necessary computer equipment and which could act as clearing houses and coordination centers for local area needs for demographic, economic or social data.

### Current Population Estimation and Population Projections

A comparison of the requirements for and availability of current population estimates and projections for economic planning and development purposes in Pennsylvania highlights the need for an integrated program in these areas at the State level in Pennsylvania. There is currently a multiplicity of estimates and projections being produced by numerous planning and other agencies for metropolitan areas, counties and municipalities. As earlier documented, differences in techniques, types of data employed and coverage render comparisons difficult and create problems concerning the aggregation of figures for smaller areas into larger entities. The Pennsylvania State Planning Board effort in current population estimation and population projection is a good start but an expanded, more comprehensive program is required. A few states have initiated on-going population research programs with quite broadly conceived activities. For example, in California, where there is one of the strongest programs at the state level, full time population research was instituted in the Financial Research Section of the Department of Finance back in 1951. The activities of the population research unit are particularly oriented towards the needs of state agencies, although population estimates are also prepared at the request of cities.<sup>1</sup> In order to illustrate the nature of the activities of the population research unit, a partial outline of its program follows:

#### Current State population by age with 2-year projections

1. Includes total, civilian and military populations
2. Requested: distribution by sex and race or color

#### Current county population

1. Includes total civilian and military populations
2. Requested: distribution by broad age groups

#### Current population of hospital service areas

#### Current population of selected cities

#### Current population of impact areas

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<sup>1</sup>Outline of Population Research Program and Information on the Population Research Program, Department of Finance, State of California, mimeographed papers, undated, furnished by Carl M. Frisen, Senior Research Technician for Population Studies, California Department of Finance, August, 1962.



## Long range population projections

1. 10-year State population projections
2. Requested: 20-to-25-year county population projections
3. Requested: 20-year population projections for selected census tracts
4. Requested: 3-to-5-year population projections for hospital service areas or on a regional basis

In connection with its city population estimation program, the research unit indicates that it utilizes city records, utility records, military data, census data and emphasizes the need for sampling and other methods of maintaining current data. The unit has a broad program of school and college enrollment projections including 20-year projections of high school graduates by public and non-public categories, by State, major counties and State economic areas. It sees a need also for such estimates by sub areas of counties for selected counties. It cites a need for 20-year projections of college enrollments and for the setting up of suitable data collecting arrangements among the colleges and institutions.

California's program also includes research in methodology although it is frankly admitted that many items fall in the "needed" category. The research includes the improvement of existing methods of preparation of current population estimates and population projection, the development and testing of new methods and the coordination of methods to provide more detail. In particular, research is specified on methods used in estimating and projecting population characteristics such as age, sex, color and race, households and housing units, institutional population, urban-rural distribution, interstate and intra-state migrants. The research unit states the need for the investigation of the possible use of electronic data processing for small area estimation and projection, for school and college enrollment projections and for projections of population characteristics.

The purpose of going into the detail above concerning the operation of the California population research unit is to indicate the types of functions which might be performed by a similar unit in Pennsylvania. The need has already been cited for a comprehensive integrated program for standard metropolitan statistical areas, (or State economic areas), county and local population estimation at the State level in Pennsylvania.

A State population unit could potentially close some of the gaps in needed population estimation and projections. However, as many of the nation's experts in this field testified at the congressional hearings on the mid-decade census, no feasible means exist at present for the accurate estimation of various characteristics of the population for many sub-State areas. It simply would not be realistic to take the point of view that all we need do is specify the extent to which estimation and projection requirements differ from availability and a population unit will redress the balance. The complex requirements for effective within-State area population estimation and projection mean that for many of the gaps observed, a serious methodological research program is called for. It would be folly merely to point to the gaps and expect that they would soon be closed by the efforts of a small population unit, no matter how competent its members were. It is useful, however, to specify some of the areas of research in current population estimation and projection to which a population unit could address itself.

It is clear that a great deal of investigation is required in the area of current population estimation and projection. In Pennsylvania, a considerably expanded program in this area is needed. There should be a continuous research program of types of data and methodology employed for current population estimation and projection for standard metropolitan statistical areas, counties, municipalities, and within city areas. Detailed study is needed on possible indicators of population change. For example, perhaps it would be found that standardization and improvement of the data on building permits would make feasible a program of estimation of change in number of dwelling units as one basis of measurement of population change. Since such a measure results from local governmental action and decision as contrasted with measures derived from indicators such as numbers of telephone connections, postal delivery units, electric, gas and water meters and so forth, considerable improvement in the former measure would seem to be feasible. If after suitable study, it appeared desirable to cover all cities of the Commonwealth by an estimation program, legislative action would probably be required to standardize classification and recording of dwelling unit data.<sup>1</sup>

Systematic evaluation programs are needed both of the methods used at the State level and of those used by local estimators. As noted earlier, local analysts may know local data best and may be cognizant of certain data in their own areas that are not known to outsiders. An investigation would be useful in determining the best way to coordinate with local personnel and to utilize the resources of the local areas.

The establishment of a mid-decade federal census would obviously improve tremendously current population estimation in Pennsylvania. Whether or not such a census is established, however, conferences of State personnel, representatives of the Bureau of the Census, of State and local governments, planning agencies and other interested parties would no doubt be extremely effective in attempting to improve coordination of special local censuses, taking into account, of course, the important factor of purely local needs.

A diligent inquiry should be made into methods of improving such items as separate estimation of institutional, civilian and military populations for the geographical areas of interest, into the general inadequacy of school census data for population estimation purposes, and into similar matters bearing on both the quantitative and qualitative upgrading of population estimation.

Turning to the components of population change, the most crucial need for population research is in the area of migration estimation. Investigations are needed to determine how best to estimate migration for standard metropolitan statistical areas, counties, municipalities and small areas within cities. As a matter of fact, the possibility of developing a systematic program of estimation and projection of the separate components of population change for the geographical areas earlier cited should be thoroughly investigated. A program for producing annual estimates of individual components of population change down to municipal levels with accompanying experimentation with methods for preparing specific birth and death rates on (say) a county basis is worth consideration. The difficulties especially in the latter type of estimation are

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<sup>1</sup>See Report to the League of California Cities on a Test of Population Estimating Techniques Applied to Selected California Cities, Carl M. Frisen, California Department of Finance, March, 1957, for discussion of this and related matters.



great, but experimentation seems to be called for.

Population projection and forecasting is another area of much needed research and study at the State level in Pennsylvania. It is difficult to assess, by the very nature of the case, the accuracy and potential usefulness of the vast array of population projections that has been produced by local and regional agencies in Pennsylvania in connection with economic base studies or for other purposes as well. That there appears to be a demand and unmet need for such figures is attested to by the earlier cited fact that county population projections are one of the most frequently requested items of information from the State Planning Board. If it is granted that planning activities are for people and that optimally therefore, it would be desirable to have all of the same items of information about the future population as were specified for historical data, no foreseeable projection or forecasting program could be adequate. There is obviously, however, a need to be practical and realistic about specifying needs and making recommendations for the fulfillment of requirements in this area. For certain planning purposes, considerable detail and accuracy in population forecasting may be required, for others, gross estimates may suffice. Different estimation techniques and differing degrees of detail are required therefore for the varying uses. Not very much is known concerning the accuracy of population projections for sub-State areas in Pennsylvania. Available information on this subject, generally, however indicates that accuracy of projections varies directly with the size of forecast area, and inversely with the length of the forecast period and the rapidity of growth during that period.<sup>1</sup>

A wide variety of techniques has been used to produce population projections for planning areas in Pennsylvania. These methods include mathematical extrapolations (arithmetic and geometric projections), cohort-survival methods, ratio and apportionment techniques, forecasts derived from estimates of future employment and occasionally more sophisticated methods such as regression analysis and gravity potential models. In tests performed for larger areas than are considered here, the Bureau of the Census found no single forecasting method consistently better than all others. There is the problem of stepping down such findings to smaller areas, but it seems clear that no simple statement concerning superiority of any single method can be made.

What seems to be needed at the State level is the development of an integrated system of projections of population for standard metropolitan statistical areas, counties and municipalities of Pennsylvania. Perhaps, after the establishment of a satisfactory system of projection, experimentation with projection for selected census tracts would be undertaken as well. Short range and longer range projections should be made. It is probably not wise to specify arbitrary periods, but perhaps 3 to 5 year projections could be attempted, with perhaps projections at five year intervals over a 20 or 25 year period.

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<sup>1</sup>Seigel, Jacob S., "Forecasting the Population of Small Areas," Land Economics, February, 1953.



## Recommendations

The recommendations which follow are offered for the purpose of improving regional and local area population statistics in Pennsylvania, particularly as regards economic planning and development. The specific form of the recommendations would undoubtedly require modification if a mid-decade census were instituted or if metropolitan regional data centers were developed in Pennsylvania.

It is extremely difficult to specify exactly what population data should be provided, since for many types of information, insufficient experimentation has been carried out to permit carefully considered judgments as to what is or is not feasible. Therefore, many of the recommendations are in the nature of suggested areas of population research. In these cases, a clear need exists for the type of data or estimates indicated. The cost and feasibility of providing such information and the benefits to be derived however, require careful study. Methods should be worked out for the accomplishment of closer cooperation and coordination with neighboring states, particularly New Jersey, in population data collection, estimation, and projection for the purpose of improvement of comparability of population figures used in aggregating to regional area totals.

An attempt has been made to group the population data recommendations into three classes, reflecting the relative orders of priorities in terms of data needs.

### First Priority Items

It is recommended:

1. That intensive research be carried out on annual estimation of net migration for standard metropolitan statistical areas, counties and municipalities in Pennsylvania. Even the timely provision of annual county net migration rates alone would provide very useful and sorely needed information.
2. That an expanded current population estimation program be developed for standard metropolitan statistical areas, counties and municipalities of Pennsylvania with emphasis upon experimentation with different methods of estimating total population, military and institutional population on an annual basis. A more formal program of testing and evaluation should be evolved for estimation techniques used at State levels and by local analysts. In connection with this program, considerable study is needed on the best method of utilizing the information sources and resources of local areas and of coordination with local personnel.
3. That an integrated system of population projections be developed for standard metropolitan statistical areas, counties and municipalities of Pennsylvania. The real need here is for a continuing program of short term and long term projections monitored and adjusted on the basis of assessment of the effects of new factors or changing underlying conditions. Projections are needed which have been interrelated with the nature, timing and magnitude of expectations concerning economic and physical development.

## Second Priority Items

It is recommended:

1. That a careful investigation be carried out to determine what improvements could be made in methods, procedures, and administration of school censuses to overcome admitted present inadequacies and thus make these data useful in population analysis and estimation. The possibility and desirability of extending into other counties the type of program operated jointly by the Bucks County Planning Commission and local school districts is deserving of serious investigation.

2. That research be initiated on the feasibility of estimation of post-censal population of standard metropolitan statistical areas, counties and large municipalities by characteristics such as age, sex and race or color and that experimentation be carried out on the estimation of specific birth and death rates by these characteristics.

3. That research be initiated on the feasibility of current population estimation and projection of total population and migration for small areas such as selected census tracts within the larger municipalities.

4. That a research program be undertaken on possible symptomatic indicators of population change. One real need in this area is for the standardization and improvement of building permit data to make feasible a program of estimation of change in number of dwelling units as one basis of measurement of population change.

## Third Priority Items

It is recommended:

1. That research be undertaken into the improvement of historical series on population in Pennsylvania primarily by counties and municipalities. In particular, the desirability of a continuation and extension of the work of the Pennsylvania Department of Health in obtaining comparable time series of births and deaths on a residence basis should be examined.

2. That research be undertaken on such matters as characteristics of migrants, the relationship between shifts in employment patterns and migration and similar subjects.

## 2. LABOR FORCE, EMPLOYMENT AND UNEMPLOYMENT STATISTICS

Statistics that describe the characteristics of any area labor force have a dual nature: they are first, of course, population data with all the uses and inherent problems of those discussed in the preceding section; and they are second, and even more importantly, measures of the nature and volume of business, industry, and other economic operations. Information on employment is information on activity; and because of this, the needs for labor statistics in metropolitan planning and development have exceedingly broad dimensions. Until better means of evaluation are devised, it is labor statistics which must play the major role in providing, for a municipality or a region, a set of records that serves many of the same functions for an area economy as accounting records serve for a business. For example, labor data furnish an inventory, as it were, of the available labor supply, labor being a principal resource of any area. They also constitute a device for evaluating the performance of the local economy by measurement of its functioning; they provide facts essential for the day-to-day administration of economic activity; and, taken historically, they are of paramount importance as empirical evidence by which planners and economists attempt the explanation of causal forces behind economic events and the forecasting of future economic change.

Almost everyone is familiar with the employment and unemployment totals published monthly and usually appearing on the front pages of newspapers as indicators of the economic health of the nation or of smaller areas. But such aggregate figures alone are insufficient for full understanding of the implications of their month-to-month fluctuations. Subtotals, broken down according to specific characteristics of the employed and unemployed, often reveal patterns of variation quite different from those indicated by their aggregates, and thus indicate the effects of many causal factors of change which might otherwise lie concealed. An adequate labor force information system, then, must furnish data necessary to permit classifications by age, sex, race, occupation, industry, area of residence, and area of employment. For special types of studies, other characteristics must be included, such as marital status (or status in the family unit), income group, education, degree of skill or extent of training and experience, length of time on current job and frequency of job shifts (or corresponding length and frequency of periods of unemployment), health or physical condition, and even mode and distance of commuting to work. Collateral information, useful in labor force analysis, includes in addition, data on wages and wage rates, salaries, fringe benefits, hours worked, accidents and injuries, work stoppages, collective bargaining agreements, productivity rates, job vacancies, and general labor market conditions; and in these categories too, classification by age, sex, and so on, is often required. When one considers that many different area breakdowns of these data may be necessary and that such classifications as industry or occupation are subject to hundreds of subclassifications, it is small wonder that descriptions of labor data publications so often refer to their "richness" of detail.

How much of this detail is essential to meet the demands for optimum information in urban planning and development is a question to which the only answer is: all of it, with the geographical breakdown of the many classifications of information in some cases even extending to districts as small as a single urban redevelopment area. City planners and economists would, of course, like to procure such maximum detail if it were obtainable. But whether or not



a system to furnish it on a current basis should be devised, and whether or not the costs of such a system would be fully warranted are questions to be decided only after careful investigation of the possible gains to be derived from the availability and use of such data.

Within the last few years the adequacy of the nation's labor force statistics and of the systems for collecting them has been subjected to a number of investigations. Early in 1962, the Subcommittee on Economic Statistics of the Joint Economic Committee of Congress published, along with a number of studies by various individuals and agencies, the results of a series of hearings on employment, unemployment, and the adequacy of labor statistics.<sup>1</sup> Still more recently an independent appraisal of measurement of the labor force has been conducted by a committee of economists and statisticians under presidential appointment and a report produced which is required reading for anyone interested in employment and unemployment.<sup>2</sup> These monographs have concentrated primarily upon data at the national level, however, and their areas of inquiry have been so broad as to justify only cursory attention to state and local statistics.<sup>3</sup> The study at hand is an attempt to extend the appraisal of employment and unemployment data to the county and area labor market levels. Smaller available resources for investigation make this extension a modest one, to be sure, but one which may probe more deeply than it might otherwise have done without the experience of these earlier studies.

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<sup>1</sup>U. S. Congress, Subcommittee on Economic Statistics of the Joint Economic Committee, Employment and Unemployment, Report, February 2, 1962; Hearings, December 18, 19, 20, 1961; (Washington, Government Printing Office, 1962); and also, Unemployment: Terminology, Measurement, and Analysis, a volume of study papers prepared by the Bureau of Labor Statistics; and, Higher Unemployment Rates, 1957-60: Structural Transformation or Inadequate Demand, a study by the Committee Staff, (Washington, Government Printing Office, 1961).

<sup>2</sup>President's Committee to Appraise Employment and Unemployment Statistics, Measuring Employment and Unemployment, (Washington, Government Printing Office, 1962.)

The committee consisted of Robert A. Gordon, University of California, Chairman; Robert Dorfman, Harvard University; Martin R. Gainsbrugh, National Industrial Conference Board; Albert E. Rees, University of Chicago; Stanley H. Ruttenberg, AFL-CIO; and Frederick F. Stephan, Princeton University.

<sup>3</sup>The report of the President's Committee, *ibid.*, pp. 190-198, contains an excellent, though short, summary of state and local area needs for data and a discussion of the adequacy of available data for these needs.

## Uses of Labor Statistics

A cardinal rule for the collection and analysis of statistical information is that the nature of the phenomenon being studied and the questions to be answered about it are the principal determinants of the design of the statistical procedures to be used. Measurement concepts and definitions, collection procedures, data organization and classification methods, choice of analytical techniques, and the particular data requirements of the method of analysis chosen all follow logically from the problem which has caused the initiation of a statistical study. If insufficient attention is paid to the nature of one's basic question, if the specific inquiries essential to answering that question are not carefully planned and precisely delineated, if, in short, the design of a study is improperly or inadequately conceived and developed, then the investigator, at the end of his efforts, will have failed in his purpose. His data will be irrelevant, inadequate, or both. For this reason, it is not infrequent that the design stage of an investigation may consume far more time and effort than the actual data collection and analysis combined.

It would seem, then, that no general system for providing labor statistics could produce data to satisfy the many and differing problems which exist at every level of business and government. This dilemma is in large part responsible for the conflict in recent months over the appropriateness of present concepts and methods of measuring employment and unemployment. If it is obvious that statistics succeed no better than individuals in being all things to all people, it will be equally clear that to provide a separate data collection program for every major purpose would be exorbitantly expensive. The eventual solution to the problem must be in the development of a multiple purpose data system, so constructed as to allow classification and reclassification to fit the needs of as many different kinds of analyses as possible.

The need to collect information on the occupational distribution of the United States labor force was noted as early as 1800, by Thomas Jefferson,<sup>1</sup> and efforts to obtain such information on a recurring basis began with the Decennial Census of 1820. The principal purposes were to obtain measures of industrial growth and indicators of change in the economic and social structure, uses which still remain major reasons for the collection of labor statistics. But relatively little serious attention was paid in the nineteenth century either to the methods of collecting data or to the possible analytical uses of them. During the affluent decade after World War I, interest increased in the nature and measurement of change in business cycles, and employment information was sought for the purpose of analysis of cycles, though with no new developments in collection techniques. The weakness of the employment information system became all too painfully evident during the depression of the Thirties when the concern arose for employment data for the means it provided to measure the effects upon the general economy of the New Deal recovery policies of the Roosevelt administration. To assess the nature of the unemployment problem which the country then faced, economists had at their disposal census data which provided only information on long term trends. Indeed, no means existed to facilitate the assessment of the short term effects of a depression or of the government policies designed to combat it. The importance of the second major use for labor force data, to which interest had

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<sup>1</sup>A. J. Jaffe and Charles D. Stewart, Manpower Resources and Utilization, (New York, John Wiley and Sons, 1951), p.4.



merely begun to awaken in the twenties, as an indicator of the movement of the business cycle and as a gauge for required contra-cyclical action by the government made clear the necessity for new types of information, new systems of collecting it, and new methods of analysis.

The struggle against unemployment during the depression generated a third major use for labor force statistics: that of creating programs for the promotion of employment. Interest consequently lay in employment and unemployment data for their own sake as well as for their measurement of economic activity. This interest was heightened during World War II when the problem became one of manpower shortage rather than surplus. Then, with peace, fears of a post-war recession and a resumption of the unemployment problem resulted in the passage of The Employment Act of 1946, legislation which made contra-cyclical activity and the promotion of full employment a continuing governmental responsibility.

The developments of the last few years give evidence that a possible fourth major area of uses of employment data is arising, analogous to some of the anti-depression uses in the Thirties, but concerned with the stimulation of national and regional economic growth. The maintenance of adequate growth rates becomes increasingly a focus for government action, sometimes parallel with, sometimes overlapping anti-recession and employment promoting programs. Although theories of economic growth may differ, there is no doubt that the growth of the nation or a region depends ultimately on how much work people do and how efficiently they do it. Unanswered questions on growth are now in the process of generating new analytical techniques and new data needs, as are the developing programs to cope with economic stagnation and to stimulate additional growth. To the interest in full utilization of our labor resources is being added the additional one of optimal use.

In practical situations, these four major categories of needs for labor data are often confounded. An economic base study, as well as other types of formal regional analyses, provides an example of a framework for analysis contributing information relevant to questions in all four areas. At the opposite extreme, a planner or operating official may make a decision which depends on a single total or percentage. Hence, no system of classification of data uses or needs is foolproof. The sections which follow will be organized on the basis of major types of analyses or problems general to them. For the purposes of such studies to be clear, however, a more specific consideration of data uses is in order.

There has been marked growth in the last few years both in the number of users of small-area employment and unemployment data and in the variety of uses to which these data are put. At the municipal government level, statistics provide information for general planning, and for making legislative and administrative decisions, in the multitude of operations characteristic of the growing governmental functions of modern cities. Examples of such uses lie in problems of land allocation for urban renewal and industrial development planning, or in planning for highways and mass transit and for civil defense. Employment changes must be anticipated in projecting needs for vocational education and for public assistance. An area of major importance is the relation of employment to the city's capacity to raise revenues as the importance of real estate taxes becomes relatively diminished as a potential source of income. And there are the implications of employment and unemployment as economic indicators to any phase of municipal operations and planning which



must take cyclical economic fluctuations into account.

Municipal and other area programs for industrial development deserve special mention. The employment aspects of these programs must be carefully considered to insure that overall and long-range economic development be helped rather than hindered by governmental activity to attract new industry. Questions need to be raised regarding the nature of the prospective employment demand, by occupation, age group, sex, race, *et cetera*. From the viewpoint of welfare, there are questions of effects on per capita earnings of new low-wage industries, and of indirect costs to the city as a result of increased demand for its various services to additional population attracted by new industries.

Many of the uses of employment and unemployment data by local governments have analogues in their uses by business and industry. The management of a firm will be interested in data concerning their own and competing industries, both as indicators of cyclical and structural change and as means for appraisal of the firm's position relative to others. For such appraisals data on wage rates, hours, and productivity, are of particular importance. Manpower planning, recruiting, and general personnel administration present a variety of needs for labor market information. Still other and different needs arise in studies to determine locations of new plants or distribution facilities, or to identify employment characteristics of consumers of a firm's products.

It must be understood that employment statistics used by government and business are not in themselves entirely adequate as measures of economic activity and growth or generally superior to other indicators such as data on incomes, output, sales, value of products, or value added to products in certain phases of the production and distribution process. However, although each of these categories of information has, indeed, its particular advantages, employment data show close enough correlation with them much of the time as to be often useable as substitutes. Furthermore, employment statistics, in some instances, may be the only one of this group of indicators which is available for a specific geographic area, time period, or type of economic activity.<sup>1</sup>

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<sup>1</sup>The general problems of the measurement of economic growth and the regional distribution of economic activity are difficult and complex ones which have become the subject of much debate and an extensive literature. Relevant examples may be found in Werner Hochwald, ed., Design of Regional Accounts, in papers by Werner Z. Hirsch, "A General Structure for Regional Economic Analysis," pp. 1-32, and by Harvey S. Perloff, "Relative Regional Economic Growth: An Approach to Regional Accounts," pp. 38-66. See also, Walter Isard, Methods of Regional Science, pp. 194-205, and Perloff, Dunn, Lampard, and Muth, Regions, Resources, and Economic Growth, pp. 3-5, 55-62, 295-296. These references discuss the economic welfare aspects of the problem as well as those of volume of economic activity.

On the subject of alternative indicators of economic change, it should be noted that employment data sometimes play a role in the construction of the alternate measures. For example, in the development of national and state income series by the U. S. Department of Commerce and in attempts which have been made to develop county income data, employment figures have been used to make income allocations for groups whose earnings data were unobtainable. Also, for income forecasting, as for population forecasting, employment projections furnish information on a major causal factor.

Unemployment data also provide information on the functioning, or, perhaps, more accurately, the malfunctioning of an area economy. Classifications of unemployment by industry of previous employment show what activities are weak or declining; classifications by occupation show which skills may be surplus to the area's needs; classifications by age, sex, race, or family status help show the nature and magnitude of welfare problems. On the more positive side, information on the presence of groups of skilled but unemployed or underemployed workers in an area can serve as incentive in a program to attract new industry (incentive, however, which those responsible for industrial development would rather not have available).

A number of current Federal Government programs allocate assistance to economically distressed areas on the basis of degree of unemployment.<sup>1</sup> The Area Redevelopment Act of 1961 uses the criterion of "substantial and persistent" unemployment as the basis for certifying labor market areas eligible under its provisions. "Persistent" unemployment is defined in this instance as unemployment in a local labor force with the percentage unemployed in excess of the national average rate by a specified amount for a specified period of time. The manpower training provisions of the Area Redevelopment Act and the newer Manpower Development and Training Act both require the use of extensive detailed information on supply and demand for skills and occupations in local labor markets. Finally, the requirements for planning studies contained in this legislation, and, of course, in the "701 program" of the Federal Housing and Home Finance Agency which was discussed at length in the first monograph of this series,<sup>2</sup> have stimulated a general interest in planning for local economic development.

Given the variety of applications of labor data, any attempt to specify the details of their statistical requirements is bound to be incomplete. The section which follows is therefore limited to the types of regional and labor market analyses which have major needs for employment and unemployment data. Statistics on factors which are not major determinants of employment and many special purpose types of analyses have been excluded from consideration on these grounds.

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<sup>1</sup>The "Buy America" act, the small business loan program, and Government procurement are examples of such programs.

<sup>2</sup>Morris Hamburg, Economic Base Studies for Urban Planning and Development in Pennsylvania, Commonwealth of Pennsylvania, (Harrisburg, 1962).



## Requirements for Data

### Employment Data Needs of a Typical Base Study

A study of the economic base of a community may take any of a wide variety of forms from haphazard description of the area's resources to complex regional and interregional input-output analyses. Hence the specification of employment data needs for such a study first depends upon its definition. A base study is here meant as that type of analysis which, by the use of industrial classifications, defines the principal types of economic activity in an area, indicating their volume by employment or income totals and distinguishing between basic (or "export," selling to markets outside the area) and non-basic (service or residential, selling to local market) activities. The base study thus seeks to identify the sources of employment, income, and output, and to indicate the extent to which these sources are affected by external and internal market forces. Part of the analysis involves the construction of impact multipliers. These are numerical constants intended to manifest the effects of changes in the demand for a region's goods and services upon the volume of employment or income in that region. For example, a government contract for a defense item increases employment in a firm by 2000 jobs. Indirectly both contract and job increase might generate still more work opportunities and produce a total increase in local employment two or more times a multiple of the original 2000.

Partly because of the greater availability of employment data, most base studies to date have used number of jobs rather than dollar income as the unit of measurement. In seeking to identify clearly the sources of employment and the effects of market forces upon them, Tiebout<sup>1</sup> has constructed a framework of analysis which divides the local economy into sectors according to sources of demand and into industry groupings of firms producing similar products. The demand sectors may be simply export and local, or they may be broken down into components reflecting the effects of distinct demand factors, as, for example, exports to the federal government as opposed to exports to private business, or local government purchases as opposed to local consumption, and so on. The industry groupings, constituted of subdivisions of total economic activity, may vary in breadth according to the purposes of a given study or the nature of the local economy. The limits upon the extent of the subdivision of activities may well be set by the availability of data, for employment totals must be provided for each subdivision. Data for this two-way classification by industry and source of demand may be visualized as a table which reveals employment totals in each industry grouping as they result from demands by the various sectors to which the industry sells its goods or services.

In an unusually fine example of an economic base study, Markets for

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<sup>1</sup>Charles M. Tiebout, The Community Economic Base Study, Supplementary Paper No. 16, Committee for Economic Development, (New York, December 1962). Professor Tiebout's excellent monograph reflects the thinking of a number of pioneers in base analysis and is as close to a consensus as has yet been reached on the subject of base study methodology.



California Products,<sup>1</sup> twenty-nine industry groups were used, with the consequent requirement of employment totals for each group by specified standard metropolitan statistical areas. These employment figures were allocated according to the sources of demand into seven major sectors, which however, ranging from exports-private sector to state and local government investment, did not account for all the sales of the industry groups, since any one firm might sell not only to the specified sectors but also to local industries. The allocation of employment according to source of demand was therefore continued where necessary over a range of twenty-four local industry groups. Hence, a maximum of 29 by 31 (7 plus 24), or 899, classifications of employment totals should have been necessary, provided that every industry group produced items for every demand sector.<sup>2</sup> This analysis thus provides some indication of the kind of detail necessary for the study of a major metropolitan area, detail which permits a realistic investigation of interindustry, and, if possible, interregional relationships, that would otherwise remain unrecognized. The study of a smaller area with a less heterogeneous economy can, perhaps, manage with far fewer categories; but, even so, care must be taken to provide for as many sectors as exhibit distinct sets of demand factors if the potential of the base study for economic explanation is to be realized.

The difficulties involved in obtaining meaningful allocations of employment by sector of demand are substantial, as the California study clearly demonstrates in a lengthy discussion of procedural problems.<sup>3</sup> Special allocation techniques had to be devised, based in part on sales information from an employer survey. However, data limitations and related problems are best discussed later in the context of sources of data and their adequacy.

Thus far, the base study has been considered as a description and analysis of economic activity at a given point in time. But the isolation of trends is essential in the making of short and long term projections and in the distinction between shortterm cyclical change and longer term structural shifts in economic activity. This requirement adds a time dimension to the industry-demand sector classification scheme and presents needs for data which, unfortunately, may often be impossible to meet if historical records can not supply information for the necessary classifications of employment. The appropriate time span will vary, like all requirements, according to the nature of the study. As with population, annual data from 1950 on would be

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<sup>1</sup>W. Lee Hansen, R. Thayne Robson, and Charles M. Tiebout, Markets for California Products, California Economic Development Agency, (Sacramento, 1961). The study deals with the Los Angeles-Long Beach and San Francisco-Oakland areas and includes a "Balance of State" and "Entire State" breakdown. Professor Charles Leven, then of the University of Pennsylvania, and now of the University of Pittsburgh, was principal consultant for the study, and numerous others collaborated to make this an outstanding example of base study technique. Abbreviated tables from this publication are reproduced in Tiebout, op. cit., pp. 33-41.

<sup>2</sup>Hansen, et al., op cit., Tables IV-3a, b, c, d. Actually these basic data tables provide 34 by 37 cells to include subtotals and grand totals. The Los Angeles-Long Beach table, IV-3a, has over 500 employment entries.

<sup>3</sup>Ibid., pp. 21-42.

desirable for each classification, although information for longer periods, not necessarily on an annual basis, would be required when the forces making for structural change, are slow in producing their effects.

As was noted in the first monograph of this series,<sup>1</sup> economic base analysis has been subject to a variety of attacks on its validity. They generally focus either on the fact that early base studies used too broad classifications or on the limitations of base analysis that require supplementation by investigation of other economic variables. But the user of a base study must be aware of its limitations and prepared to supplement its information where necessary. He must realize that the base study concentrates on a major source of economic growth, the expansion of export-producing industries, and that other factors, technological change particularly, have their roles to play in producing growth. Furthermore, the base study which deals in employment rather than in income, output, or wealth, examines only one aspect of growth. It is obvious, then, that for many purposes, the base study will be broadened in its scope, with consequent expansion of data requirements beyond those cited here.<sup>2</sup>

### Planning For Full Employment

As a device for the investigation of determinants of employment and unemployment, the base study which measures economic activity by number of jobs is incomplete for it is an inquiry into the demand for labor, and that only in a limited sense. By its very nature, it must ignore not only many aspects of factors interacting to produce jobs, but also all the factors operating to produce the labor supply. Number of employed and job vacancies are the best data describing the magnitude of labor demand; while, employment and unemployment data, appropriately defined, are measures of available labor supply to fill jobs. In this kind of analytical framework provided by the traditional economic analysis of supply and demand, investigations of employment for its own sake and as an indicator of the nature of economic activity obviously overlap. And the base study may well have a part to play in both investigations. But it was never intended to constitute a full explanation of the economics of employment. Considering the complexity of this phenomenon, no single analytical device can provide an adequate explanation. The economist who attempts to discover why employment is high or low, stable or unstable, or concentrated in one form of economic activity rather than another, must pursue the complex

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<sup>1</sup>Hamburg, op. cit., pp. 39-44.

<sup>2</sup>For example, the typical base study leaves much unsaid about the nature of interregional relationships, or, within the region, about the characteristics of employment and the functioning of the labor market in producing jobs. The multiplier analysis, particularly, may prove inadequate, since wage level differences may produce different multiplier effects for the same increase in jobs, and since changes in wage levels or in productivity may produce multiplier effects with no change in the number of jobs. Traditional base analysis also ignores the effects of changes in income from property and other sources which do not involve employment of the recipient. See Isard, op. cit., p. 189 ff.; or Ralph W. Pfouts, The Techniques of Urban Economic Analysis, (Trenton: Chandler-Davis Publishing Co., 1960), pp. 67-80; for additional discussion of these points.



of causal factors as best he can with the theory and the analytical tools available and relevant. Fortunately, traditional analysis of labor supply and demand does offer a framework for the conduct of such studies and hence the basis for specification of data requirements. Both base study and other possible methods of analysis of factors operating in the market must be used; and employment data used in planning for economic growth may serve, with additional data, in planning for full employment.

It would be possible to follow the lead of base analysis and concentrate entirely on aspects of the regional demand for labor, on the assumption that in the long run migration will remedy any imbalances between labor supply and labor demand. That the latter point is true is only too evident from the declining population in recent years of some Appalachian coal regions. Migration, however, may not be the economically optimal solution to these imbalances, even if the social costs involved were to be disregarded. It is clear that both business and government must give more attention to the functioning of the labor market and to the various means by which jobs are created and the persons to fill them secured.

Until recently, planning for full employment has been neglected at the municipal level. Such planning has been largely left to the Federal Government, and little has been accomplished apart from the activities of the United States Employment Service and its affiliated state agencies. The local school systems have usually conducted vocational training to assure a steady supply of needed skills but much of the time this was done with little or no attention to the economics of labor supply and demand. Now, however, with the realization that unemployment is a persistent, structural problem in many areas, a problem which remains even when business conditions improve, local labor market analysis is receiving increased attention. Current imbalances between labor supply and demand are only in part the cause of concern, for automation and the movement of larger numbers of young persons into the labor market only threaten to worsen the imbalances.

Further impetus to local action to find the causes and cures for unemployment has been given by the Manpower Development and Training Act of 1962. The Act provides for the organization and financing of programs for training unemployed and underemployed workers, and also for research in the field of manpower. It notes that the rapidity of economic change has left many workers with obsolescent skills, while at the same time industry has suffered from the lack of workers in other skilled categories to fill critical needs. Programs are proposed to identify the present and future supply and demands in various skills, to train those in surplus categories for skills in short supply, and to provide better information on manpower utilization generally. Since much of the activity under the Act will be decentralized to state and local agencies, the implementation of its provisions can be expected to generate requirements for labor statistics much more detailed than any now existing.

Emphasis here differs greatly from that of the economic base study. Employment totals alone are insufficient. Such analysis requires information on specific job vacancies and detailed characteristics of unemployed and underemployed. Attention is focused on skills and occupations, rather than on industrial classifications which involve groupings of many different skills. Furthermore, it is necessary to take into account the personal characteristics of groups of workers, such as education, age, sex, race, and so on. Ideally, such information would be obtained from household surveys taken for each major labor market area, following the model of the present national Current



Population Survey.<sup>1</sup> But one must be realistic in assessing data needs, and monthly collection of such information would be costly. Unfortunately, nothing less will give adequate information on seasonal and other within-the-year changes in the labor force or on the factors responsible for them. An only partial substitute might be an annual sample survey for major economic regions, giving detail comparable with that of the Decennial Census (hopefully of better quality). Information so obtained could be used as bench marks for estimates, based on other sources of information, of the intra-annual changes. Further indication of the possible compromises for feasible data gathering systems will be left to the discussion on data availability for only then will the extent of the inadequacy of presently available information become clear. It perhaps suffices to note at this point that to establish current labor supply and labor demand and to project these for the future, regularly available data are essential on population by age, sex, and race; on the employed and unemployed by occupation, by industry of employment, and by status as fully or partially employed. Characteristics of migrants are also necessary and, in addition, trends in participation rates by age, sex, and race, are needed to forecast accessions to and losses from the labor supply as the aging of the population causes groups to enter and drop from the labor force. Finally, trends in the industrial need for skills must be established, along the lines of trends discussed earlier for studies of the economic base. More detailed specification of these needs might better be made in such a list of headings for tables of data as appears below:

1. Total noninstitutional population, by age group, sex, and color.
2. Total labor force including Armed Forces, by age group, sex, and color.
3. Total civilian labor force, by age group, sex, and color. (If significantly different from item 2.)
4. Labor force participation rates (ratios of labor force to population), by age group, sex, and color.

#### Employment Status

5. Employed persons, by type of industry and class of worker.
6. Employed persons, by age group, sex, and color.
7. Employed persons, by major occupation group and sex.
8. Employed persons with a job but not at work, by reason for not working.

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<sup>1</sup>Data from the Current Population Survey may be found in Employment and Earnings, a monthly publication of the U. S. Department of Labor. The section of this publication entitled, "Explanatory Notes" gives a brief discussion of the nature of this survey. Further information on the survey appears later in this study on pages 84 (note) and 114.

9. Persons in nonagricultural industries on part time for economic reasons, by age group, sex, color, and marital status.
10. Total unemployed and unemployment rates by age group, sex, and color.
11. Unemployment rates and per cent distribution of the unemployed, by major occupation group.
12. Unemployment rates and per cent distribution of the unemployed, by major industry group.
13. Total unemployed and per cent distribution, by duration of unemployment.
14. Long-term unemployment, by age group, sex, and color.
15. Long-term unemployment, by industry and occupation groups.

#### Other Labor Force Characteristics

16. Employment status of the population, by marital status and sex.
17. Per cent of population in the labor force, by sex, marital status, and age.
18. Employment status of family head, wife, and other family members (in husband-wife families).
19. Labor force status of married women, husband present, by presence and age of children.
20. Occupational distribution of employed married women, husband present.
21. Educational attainment of the civilian labor force 18 years old and over, by sex and color.
22. Median years of school completed by the civilian noninstitutional population 18 years old and over, by employment status, sex, and color.
23. Median years of school completed by the civilian labor force 18 years old and over, by age group, sex, and color.
24. Median years of school completed by the employed civilian labor force 18 years old and older, by occupation group, sex, and color.
25. Persons with two jobs or more, by industry and class of worker of primary and secondary job.
26. Work experience of the population during the year, by extent of employment, age group, sex, and color.

27. Number of persons with work experience and proportion who worked year-round at full-time jobs, by industry group and class of worker of longest job.
28. Extent of unemployment at any time during the year, by age group, sex, and color.
29. Unemployed persons who are new entrants into the labor force, by sex and color.
30. Unemployed persons who are re-entrants into the labor force, by age group, sex, and color.
31. Rate of job changing, by age group and sex.
32. Employment pattern of job changes, by age group and sex.
33. Reason for changing jobs, by age group and sex.
34. Employment pattern of job changes, by major occupation group of longest job and by sex.
35. Reason for changing jobs, by major occupation group and sex.
36. Employment pattern of job changes, by major industry group, class of worker of longest job, and sex.
37. Reason for changing jobs, by major industry group, class of worker of job left, and sex.
38. Gains and losses to the labor force by migration, and selected characteristics of migrants.
39. Gains and losses to the labor force for reasons other than migration.<sup>1</sup>

This illustrative list of employment and unemployment data requirements for labor market areas is by no means complete as an indication of data needed; it does not include information on such economic factors as income or productivity,

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<sup>1</sup>Trends, rates of change, and projections are appropriate for many of the above items.

If data are subject to seasonal fluctuations, totals shown should be annual averages or else seasonally adjusted.

Certain data may be appropriate by residence, others by place of work, and some by both.

Gross average earnings data would be desirable for selected industry and occupation classifications, as would average weekly hours data.

Illustrative tables for many of the above entries may be found in Employment and Earnings, a monthly publication of the U. S. Department of Labor.



nor does it provide for data on social and institutional factors affecting the labor market, such as individual attitudes toward certain kinds of work, or the extent of unionization.

Present and prospective job vacancies, a major type of information requirement, has barely been mentioned thus far, because job vacancy data are on the frontier of developments in labor statistics. Not only are adequate job vacancy data non-existent, but many labor economists and statisticians have argued that the problems of obtaining such data are insurmountable. The need, however, for such information is obvious in order to facilitate the activities of such agencies as state and private employment services, to plan programs in vocational education, and to provide adequate vocational counseling. Job vacancies comprise a major data problem which requires far more attention than has been given to it thus far; and, until a solution is found, the progress of planning for full employment will be considerably deterred.

### Area Classification Problems

Another major problem of data requirements results from the fact that the labor market itself is little more than a useful economic fiction; it neither physically exists as does the stock market, nor does it deal with easily identifiable commodities as do the markets for many tangible products. It is rather an economic complex of all the forces which cause individuals to offer their services and employers to recruit to fill their job vacancies. There are geographic dimensions to the process, of course; but the problem of setting the bounds of an area labor market--a problem which must be solved before data may be classified by area--is complicated by the fact that there is not one market but many markets, overlapping and differing because of the nature of hiring practices for particular occupations and skills, the extent of the availability of information about job vacancies and job seekers, and the willingness of workers to commute from residence to job.

Usually a labor market area consists of a centrally located city as a principal source of employment and sufficient surrounding territory so that the majority of the labor force have both their residences and places of employment within the area. A further determinant of the area's boundaries is proximity to other centers of employment, for cities exercise a gravitational pull, as it were, on their labor supply. Distinct submarkets for particular occupations, industries, and even companies, may be found within such a labor market but these often reflect the conditions in the overall area. On the other hand, small numbers of highly skilled or professionally trained individuals may be able to offer their services over many areas.<sup>1</sup>

For the most part, the factors determining the boundaries of an area

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<sup>1</sup>Discussions of the concept of the area labor market and its limitations may be found in Herbert S. Parnes, "The Labor Force and Labor Markets," Employment Relations Research, (Harper and Bros.: New York, 1960), pp. 1-42; Richard C. Wilcock and Irvin Sobel, Small City Job Markets, (Institute of Labor and Industrial Relations, University of Illinois, Urbana, 1958), pp. 1-6; and in numerous other sources which appear as references in these two publications.

labor market are those taken into account in designating a Standard Metropolitan Statistical Area (SMSA).<sup>1</sup> The area data needs of the labor market analyst are often satisfied when data are available for SMSA's or can be combined for smaller areas into SMSA aggregates. But problems arise when such combining of data involves areas, parts of which lie in more than one state. Several New Jersey counties, for example, are clearly elements of the economic region centering on Philadelphia. In such cases provision must be made for uniform collection procedures if the county data are to be meaningfully combined.

The problem of overlap may be further illustrated by the labor market areas of Philadelphia and Wilmington, Delaware. A Philadelphia resident is laid off from his work for a firm in Wilmington. Is he an increment to the Delaware or the Pennsylvania unemployed? The answer depends on one's interests, for his status represents lessened economic activity in Delaware and possibly an additional welfare problem for Pennsylvania. Had he been employed, instead, in Camden, New Jersey, his residence and place of work would have been in the Philadelphia Standard Metropolitan Statistical Area, but the duplication of interests would still exist.

This case also illustrates a general data need. For some purposes the area classification must be by residence of the individual, for others, by place of work. Data by residence would be necessary in planning for vocational education or for public assistance. Forecasting of revenues from taxation of wages would require place-of-work data if the tax were collected from employers and residence data if from employees. Land use studies for urban renewal or industrial development would need both types, while planning for highways and mass transit would require not only both but also information on methods of commuting from residence to place of work.

The area requirements for employment data to be used in economic base studies reflect many of the problems just discussed. As Tiebout points out,<sup>2</sup> no single area is most appropriate for a base study. Possibilities include the labor supply area, the trading area, the metropolitan area, and even a multi-state region--or perhaps all of them--since interpretation of the information for a small area depends on knowledge of its economic relationships with the larger areas upon which it is dependent. And, while emphasis has been placed on economic areas, it must be kept firmly in mind that the policy and decision making bodies which most frequently sponsor economic base studies are local government agencies. If the reason for conducting the base study is to gain information for the solution of a city's problems, then it is first the city for which data must be secured.

### Labor Mobility

Labor mobility is the employment-unemployment counterpart to population migration. It is a more involved process than the geographic migration of the population, however, including movements between employers, occupations, and industries as well as localities, and also movement from employed

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<sup>1</sup>For a detailed definition of the SMSA concept, see U. S. Bureau of the Budget, Standard Metropolitan Statistical Areas, (Government Printing Office: Washington, 1961).

<sup>2</sup>Tiebout, op. cit., p. 21.



status to unemployed or from labor force to non-labor force status. Since labor mobility is inextricably involved with the adjustment of labor supply to labor demand, data on labor mobility are essential for an understanding of the functioning of a labor market and of the labor resource as part of the economic base of a region. The analyst needs information on both the extent and character of labor mobility, its determinants, their differential effects for various age, sex, race, occupational, industrial, and other groups, and on the nature of the labor allocation process. Much of the information required is too specific in nature for a general data collection system and must be obtained by interviews for detailed work histories. Such information is expensive, particularly since a continuing program is necessary to show the changing patterns of the characteristics over time.

Despite this problem, knowledge of mobility is essential to such activities as projecting the size and composition of employment for future years. Geographic mobility naturally involves migration and raises the requirements discussed under that heading in the section on population.<sup>1</sup>

In addition, information is needed on the relative frequency of job shifts, by group, for occupations and industries, with age, sex, race, and area breakdowns. Voluntary job separations should be distinguished from layoffs and information given on the reasons for job change, particularly when workers shift from one labor market area to another. Trend information is particularly important for forecasting, as always, and unfortunately is largely non-existent.

Although much excellent work has been done in studying labor mobility, most studies have been small in scope with differences in methods which have led to conflicting results. Until more resources are devoted to collection and analysis of labor mobility data, the answers remain uncertain as to which kinds of workers are likely to move within or from a labor market and which are not. The implications of this uncertainty are obvious both for the businessman who desires to obtain key workers and to the planner or government official who must make decisions depending on the size and composition of a future labor force.<sup>2</sup>

### Special Problems in Measuring Unemployment

Unemployment statistics are probably the most debated of recent years. The argument, however, founded upon confusion as to what a measure of unemployment should be, brings attention once again to the fact that appropriate measures differ according to the purposes for which data are required. In the study of unemployment, information may be collected from individuals

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<sup>1</sup>Supra, pp. 16-17, and 19.

<sup>2</sup>Probably the best example of a labor mobility study is that of Gladys L. Palmer and Carol P. Brainerd, Labor Mobility in Six Cities, Social Science Research Council: New York, 1954. The detail given on data needs and data collection procedures is particularly relevant. A general appraisal of research on this subject is found in Herbert S. Parnes, Research on Labor Mobility, S.S.R.C.: New York, 1954.



ranging on a wide scale of employability; those employed full-time, part-time, or intermittently; those not employed but seriously looking for work; those unemployed and desiring work though not looking for it; and so on through various gradations to the unemployables. The problem lies in which of the individuals ranging along this scale of employability should be counted in the measurement of unemployment and the answers must differ with the functions of the measures required: as indicators of economic activity, of individuals for whom jobs should be found, of underutilization of manpower resources, or of the supply of manpower available to be tapped in an emergency. The measure could be limited to those who need work to support themselves or their families. Persons entering the labor force for the first time or reentering after an absence might be placed in a separate category. So might housewives who would like to take part-time work, students, young people, retired persons, and so on. For some purposes our standard measures of unemployment may not be sufficiently inclusive. The Census Bureau, for example, considers anyone as employed who works for pay one hour or more a week. Thus it fails to count as unemployed many who are, in the normal sense of the term, "not employed." There are many, furthermore, who are considered, not as "unemployed," but as "not in the labor force" because they do not seek jobs, while actually they seek none since there are none to find. Such persons are therefore cases of concealed unemployment owing to the absence of demand for their particular services. Always, then, there is the requirement for a structured measure which will show these major gradations in employability and permit the compilation of data series appropriate to the varying kinds of analyses.<sup>1</sup>

In order to plan for full employment, additional information is necessary on the nature and causes of unemployment in a given area. As noted earlier, unemployment data by occupation and industry are needed to show where surpluses of skills are developing or where industry demand for a particular assortment of skills is declining. Information on the personal characteristics of the unemployed is required both to assess the economic impact of their unemployment and to determine the appropriate action for reducing the level of unemployment. Totals by age, race, sex, level of education, level of skill, status in a family unit, and previous income level, are indicators of the nature of the unemployment problem and its causes. Duration of unemployment and unemployment compensation status warrant additional classifications. And where unemployment conditions are chronic, still additional detail on work histories may be necessary to provide the information required for eventual

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<sup>1</sup>An extensive literature exists on the problems of definition and measurement of unemployment. Much of this material is extremely technical. However, an excellent presentation which is not so is the paper by Raymond T. Bowman and Margaret E. Martin, Special Report on Unemployment Statistics: Meaning and Measurement, (Office of Statistical Standards, Bureau of the Budget, Washington, D. C., October 1961). See also: Gertrude Bancroft, The American Labor Force, (New York: John Wiley and Sons, 1958), pp. 183-200; the conference report, The Measurement and Behavior of Unemployment, (National Bureau of Economic Research, Princeton University Press, 1957); or U. S. Congress, Subcommittee on Economic Statistics of the Joint Economic Committee, Unemployment: Terminology, Measurement, and Analysis, (Washington: Government Printing Office, 1961), the last a collection of studies prepared by the Bureau of Labor Statistics for the Committee.

solution of the unemployment problem.

Classification of unemployment by its causes is complicated by multiple causation. Since a person may be jobless for a number of reasons, if unemployment were to be categorized by cause, the totals in each group would combine to considerably more than the overall number of unemployed. Still, this scheme of classification would be useful for analytical purposes and possible if the classifications were kept simple and clearly defined with a "catchall" classification for those who fail to fit neatly into the major categories. Four basic causal classifications of unemployment in general use among economists are seasonal, frictional, cyclical and structural. Recurrence and short duration are the characteristics of seasonal unemployment, with weather, seasonal buying patterns, and spurts of entries into the labor market (such as students in June), as the real causes of seasonal fluctuations in unemployment levels. Frictional unemployment, also, is of short duration; it is the unemployment which must be expected because of the imperfect functioning of a free labor market where people change jobs in response to the need to match labor supply with labor demand. The implications for planning and policy of these two short term kinds of unemployment differ greatly from those of the other, longer term types. Cyclical unemployment, of course, is that resulting from local or general declines in business activity. Structural unemployment is more difficult to define for measurement purposes because it is basically an extreme form of frictional unemployment. More inclusive than technological unemployment, it includes unemployment arising from such sources as chronic depression in an industry affected by changing consumer tastes or major unemployment in an area whose principal employer has relocated elsewhere. The key to the classification is that this kind of unemployment arises from a major change in the economic structure of an area which produces a labor supply and demand imbalance not remediable in the short-run except by migration. Structural unemployment is accentuated by cyclical recessions so that an overlap may exist between these classifications. A possible escape from this double-counting problem, though not entirely satisfactory from the standpoint of analysis, lies in basing the classification system on duration of unemployment. Such a system has been evolved by the United States Department of Labor, which currently classifies as "long-term unemployment" that of fifteen weeks or more and as "very long-term unemployment" that of six months or more. And a strong argument can always be made for accepting a well-tested classification system whose limitations are known.

Where chronic, long term unemployment exists in sizable amounts, as it does in a number of areas in Pennsylvania, still additional data requirements may arise from the need to assess the efficacy of measures designed to deal with the problem. The references made earlier to programs of industrial development and job training and retraining are relevant here. In general, it is likely that chronic, long term unemployment, if it continues, will require a variety of special studies, on topics ranging from its effect on state unemployment compensation programs to the nature and impact of the migration which it inevitably produces.

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<sup>1</sup>A detailed analysis of this problem of long term unemployment appears in the report by Jacob J. Kaufman and Helmut J. Golatz, Chronic Unemployment in Pennsylvania, Industrial Research Bulletin No. 1, Pennsylvania State University, 1960.



## The Need for Consistency in Data

The ever present problem of the suitability of data to the purposes for which they are required is accompanied by the equally persistent one of consistency in the information itself. Since inferences are to be so often drawn regarding the nature or causes of differences observed in compared data, it follows that such inferences will be meaningless if the differences are brought about by variations in collection procedures rather than by actual changes in the characteristics under study. For example, a rise in the number of unemployed would hardly imply worsening economic conditions if the reason for the apparent increase lay in improved survey methods allowing identification of persons otherwise overlooked or in a changed definition of an "unemployed person" making the category more inclusive. These and other types of procedural variations present problems of comparability encountered in data from all major sources of employment and unemployment statistics whether the information be collected at the same time in several places or at successive times in the same place.

Awareness of the nature and limitations of statistics for comparative analysis requires an understanding of the possible variations in each of the elements that enter into data collection and presentation, among them, definitions of measurement concepts and coverage, classification criteria, collection procedures, estimating methods where relevant, and direction and approximate magnitude of errors in estimating or measurement. Some distinctions are obvious, as between employment totals from a survey of firms providing a count of jobs and those from a survey of households providing a count of persons. Because an individual may hold more than one job,<sup>1</sup> substantial differences would be expected between such totals which, without clarification as to the nature of survey procedure and purpose, might appear to fall within the same category of employment data.

A more subtle type of distinction than that between concepts of employment must be made among variations within the single concept; variations arising either during an individual survey or between repetitions of one, as a result of changes in definitions or differences in their interpretation from one interviewer to another. To illustrate the difficulty, it seems desirable to furnish a definition, such as that of employment from the 1960 Census of Population,<sup>2</sup> which provides evidence, as well, of the detail necessarily specified to minimize departures from uniformity of interpretation. "Employed persons," according to the Census definition, comprised all civilians fourteen years old and over who were, at the time of interview, either "at

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<sup>1</sup>Approximately five per cent of the employed are multiple jobholders with the rate much higher for groups such as farmers or male teachers. See Jacob Schiffman, "Multiple Jobholders in May 1962," U. S. Department of Labor, Bureau of Labor Statistics, Monthly Labor Review, Vol. 86, No. 5, (May, 1963), p. 516.

<sup>2</sup>Each "Final Report" of the 1960 Census has an introduction which discusses definitions, classifications, procedures, and accuracy of the data. See, for example, U. S. Census of Population, 1960, Final Report PC(1) - 40C, General Social and Economic Characteristics, Pennsylvania (Washington: Government Printing Office, 1962). The definition, given here in somewhat abridged form, appears on p. xix.



work" (performing any work for pay or profit or working without pay for fifteen hours or more on a family farm or in a family business), or "with a job but not at work" (not working and not looking for work, being temporarily absent from jobs or businesses because of bad weather, industrial dispute, vacation, illness or other personal reasons). The definition thus far would seem at a glance to be sufficiently detailed to have precluded inconsistencies in the gathering or interpreting of statistical information with regard to the "employed." But such would not actually have been the case, had the clarification of the concept of employment stopped here; too many opportunities would have presented themselves for varying subjective judgments on the part of different interviewers. For example, would individuals temporarily laid off from work be considered as employed or not? Obviously, a complete definition had therefore to include the specification of categories of persons not to be considered as "employed." Those just mentioned were not so considered in the definition. Nor were members of the Armed Forces who, though counted separately as part of the "labor force" in general, could not be enumerated as part of either component, "employed" or "unemployed," of the "civilian labor force." On the other hand, students, housewives, retired persons, and seasonal workers counted during their off-season (unless looking for work at the time), though normally omitted altogether from the general "labor force," had nevertheless to be defined and counted as "employed persons" if "for pay or profit," they had worked, even for an hour, during the enumeration week. The necessity for such complexity of explicit definition might at first be doubted, but upon consideration it is clear that elimination of any one point would open a door to a variety of judgments within the definition of "employed persons" and thus permit such inconsistencies in data as to render them useless in the making of meaningful interpretations.

Still, neither such precise definition nor the expenditure of more than \$100 million could guarantee that the 1960 Population Census would be conducted in all areas by individuals using exactly the same classification criteria in all cases. There cannot even be any assurance that all persons were counted; and this, in itself, introduces another element of potential inconsistency: that of degree of incompleteness, both from classification to classification within a census and, of course, among successive censuses. Despite their limitations, census data are sufficiently consistent for many purposes. Where they may be inadequate, the user must learn the extent of the inadequacy; he is therefore confronted with another major problem of data needs. The solution to the problem lies in information which will permit adjustment of the data in order to improve their comparability.<sup>1</sup>

Many other problems of comparability exist. Because of the effects of seasonal influences, for example, comparisons of employment and unemployment information between industries might not be so meaningful as would be desired if a survey were made at a time when certain industries were at seasonal peaks of activity and others at seasonal lows. In such cases information on the extent and timing of seasonal fluctuation is essential to adjust the data for purposes of comparison. The need for information here is substantial,

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<sup>1</sup>For an excellent discussion and illustration of the necessary adjustments to census data, the bases for making such adjustments, and the adjusted series, see Everett S. Lee, Ann Ratner Miller, Carol P. Brainerd, and Richard A. Easterlin, Population Redistribution and Economic Growth, United States, 1870-1950 (Philadelphia: American Philosophical Society, 1957).

for seasonal patterns, if they exist in any regularly recurring form, can only be determined by observations at frequent enough intervals to detect the pattern and over a long enough period to establish its regularity.

Another requirement for statistical information has to do with the magnitude of error in the measurements of the characteristics under study. Censuses for example, always fail, as has been noted, to count a small proportion of the population, a proportion that may vary considerably from area to area or classification to classification, so that a difference observed between the statistics may be in part due to error and in part to actual difference. The post-enumeration studies for decennial censuses have demonstrated that information on the magnitude of error can and should be made available.<sup>1</sup>

Much of the small area data now available is not from complete censuses, but from sample surveys, presenting a separate error problem: that of differences between values obtained from the sample and corresponding values that might have been obtained had a complete census been taken. When one puts to use sample survey data as approximations of characteristics of a population which the sample purports to represent, estimates of the probable differences between sample information and the true figures are appropriate. These estimates, too, are obtainable, although the construction of survey techniques permitting them will usually require additional expensive research.<sup>2</sup>

One more type of incomparability of data leading to erroneous inferences deserves to be mentioned; that which arises from the nature of classification even when the data themselves are accurate. Where classifications are too broad, much variation in the characteristic being measured may be hidden in the classification process by the aggregation or by the offsetting of extreme items. Such concealment of variation may occur in different degrees in apparently comparable classifications. For example, when industry classifications, such as that of the manufacturing category, food and kindred products, are studied, it becomes apparent that considerable variation among individual firms and subgroupings of firms is hidden in the statement of industry totals. For retail trade, personal services, and such categories, the variation may be even greater. To explain changes in industry aggregates, therefore, classifications much narrower than "food and kindred products" or "retail trade" or the like are necessary.<sup>3</sup>

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<sup>1</sup>A summary of some of the quality of data findings for the 1950 census may be found in Bancroft, *op. cit.*, pp. 151-175.

<sup>2</sup>A standard reference for sample survey design and the measurement of survey error is M. H. Hansen, W. N. Hurwitz, and W. G. Madow, Sample Survey Methods and Theory, Vols. I and II, (New York: Wiley, 1953).

As an example of the statement of sampling error for estimates based on a probability sample, the monthly Current Population Survey estimates of U. S. unemployment are produced in such a manner that the chances are two out of three that an unemployment estimate would differ from the figure for a complete census by less than 100,000, and nineteen out of twenty that the difference would be less than 200,000.

<sup>3</sup>Robert M. Lichtenberg, in his study of the dominant locational characteristics of industries in the New York area considered 446 separate industry classifications under manufacturing alone in order to examine the statistical evidence for influences on location. The classifications, with a few exceptions, were

(continued)



Another aspect of the same problem may be illustrated by unemployment rates for two cities which differ considerably because of the greater proportion of unskilled workers in the one than in the other; but when the rates for the skilled groups alone, or those for unskilled workers, are compared, little or no difference may be observed between cities. A similar instance might occur in observing the varying participation in the labor force of different groups in the population, where a larger proportion of the males in one city might be at work than in another simply because the second city has a larger proportion of retired persons in its population. The data need in such cases is for sufficient information to indicate to what extent one must refine classifications, and occasionally for data to permit the statistical procedure of rate "standardization" which compensates for the existence of compositional differences in grouped data.

### Forecasting Employment and Unemployment

Anyone planning for the future forecasts at the same time the nature of the environment to which his plans apply, even when, unconsciously, he assumes that the future situation will be the same as the present and so makes a naive, "no-change" forecast. Such a planner might be surprised to discover that he has made unwitting use of procedures and assumptions which some economists refer to (without disparagement) as a "naive forecasting model." Slightly more sophisticated than this, but still considered naive, would be a model constructed upon the presupposition that the change during the period over which a variable is being forecast will be of the same direction and magnitude as the change during a period of equal length just completed. And one stage more refined is the model that would project for a future period an amount, or rate, of change which is based on the pattern, rather than magnitude, of change in the past. Other models might involve presuppositions about prospective changes in the observed pattern, and so on in a range of increasing complexity until highly analytical models are reached that attempt to show mathematically the key relationships between variables to be predicted and factors influencing them. Unfortunately, the complexity and sophistication of a model are no guarantee of accuracy in forecasting.

An indicator of the difficulty of accurate projection of labor force characteristics is supplied by the very multiplicity and variety of models that have been used, each of course, with its own specific needs for data. All methods, however, rest upon the general assumption that patterns or relationships from the past are useful in determining conditions in the future and require in common detailed historical data, usually referred to as time series, which show the nature of past patterns and the interactions of relevant variables.

As was noted for population in the first part of this monograph, it is

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(Footnote continued)

based on the four digit Standard Industrial Classification system provided in the U. S. Census of Manufactures. This system will be discussed in detail in the chapter which follows on availability of data. For the 446 classifications, see Robert M. Lichtenberg, One-Tenth of a Nation, (Cambridge: Harvard University Press, 1960), pp. 258-271.



likewise true for the labor force that no single statement can depict adequately the variety of reasons for needing forecasts, the kinds of information to be predicted, or the character which these forecasts must have. For planning purposes, one may at times need projections of any of the types of data thus far discussed; but the planners' principal needs are generally for the volume of employment and unemployment by industry, occupation, age group, sex, and, of course, cross-classifications of these. Forecasts of such characteristics may be needed both for their own sake and for use in projecting population or other variables.

In connection with the latter need, there is a broad requirement for forecasting items to provide information for additional forecasting. Except for the case of naive models and simple extrapolations of trends in time series, forecasting techniques also use data on factors which are related to or interdependent with the variable whose forecast is desired. Hence, we may have forecasting models within forecasting models and a breadth of data requirements as large as the possible range of economic, sociological, psychological or other factors which influence labor supply and demand.

The nature of a suitable model will vary according to the nature of the forecasting problem at hand, as, for example, in short-term as opposed to long-term projection. The need for short-term forecasts usually arises from fiscal planning, employment stabilization, public welfare, or other government activities affected by month-to-month fluctuations in employment. For short periods, simple and direct extrapolation of the series of interest is often not only the easiest but the best method of forecasting.<sup>1</sup> If the series is subject to seasonal fluctuations, then such variation may require estimation also to permit a modified projection with allowance made for seasonal pattern. Somewhat similarly, allowance may be required for the influence of cyclical movements in business conditions. Basically, however, the data requirements for short-term forecasting lie in sufficiently long series of observations of the variables being forecast.

It is for the longer term forecasts, of several years or more, that elaborate forecasting models become necessary. In the short-run, many of the factors which influence the level of the variable to be forecast will remain relatively constant in their effects. But, when these factors are likely to change significantly during the period of the projection, some means must be provided to account for the direction and magnitude of their potential change. Analytical forecasting models<sup>2</sup> provide such a means, through their mathematical specification of economic relationships and the supporting statistical analysis which enables the relationships to be expressed in quantitative terms. The analytical

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<sup>1</sup>See Robert Ferber and P. J. Verdoorn, Research Methods in Economics and Business, (New York: Macmillan, 1962), pp. 442-445, for discussion and examples on this point.

<sup>2</sup>The concept of the "analytical forecast," borrowed from Ferber and Verdoorn, op. cit., is therein discussed on pp. 455-461. These authors' comments on the limitations of models, a topic only briefly referred to here, are also well worth noting.

Analytical forecasting models include the standard econometric models. For these, see Lawrence R. Klein, An Introduction to Econometrics, (Englewood Cliffs: Prentice-Hall, 1962), and his more advanced, A Textbook of Econometrics, (Evanston: Row, Peterson, 1953), both of which have sections on forecasting.

forecast may be determined by a single equation or through the solution of a system of many equations, but in essence, it is, as the term "model" would indicate, a representation of some of the aspects of the structure in which economic change takes place. As such, the model is necessarily an abstraction, imperfect by definition, but one which presumably can be refined and improved to whatever extent the available time, understanding, and other resources permit.

By this definition, the economic base study is not in itself a forecasting model. It may, however, furnish information to provide the basis for such a model, and since a primary concern here is with data needs for economic base studies, an investigation of the relation between the base study and forecasting models is appropriate.

The function of the economic base study in forecasting employment was noted earlier in the general discussion of its nature and data requirements, the latter being specified as employment totals, broken down into a two-way classification by industry and by source of demand for the industry's products. The base study, then, is primarily a specification of relationships, whose quantification is made possible through construction of multipliers. As base studies of an area are conducted for successive points in time, it may even become possible to develop trends of change in these multipliers. Using the information thus developed, various forecasting models can be constructed. A simple though perhaps not very realistic model takes the approach of projection of the "export" sectors of the economy. Then the multiplier analysis is used to forecast the local sector employment. How adequate the sector forecasts will be depends, of course, both on the extent to which the multiplier analysis is valid as a representation of forces interacting to produce employment and the degree of accuracy with which one can predict the multipliers that will be applicable at the future point in time.

The model just described is one for projecting the demand for labor. It would be possible to construct a model to project the supply of labor, although the approach would be demographic rather than economic. (An example of such a model will be discussed in due course.) But, since labor supply and labor demand are clearly interdependent, a realistic model ought to take this fact into account and forecast both simultaneously. Other types of interdependence warrant representation in long-range forecasting models as, for instance, the relationships between nation and region. Unfortunately, the present state of development of regional economics and forecasting models is such that it permits serious disagreements among experts on the design of analytical approaches that take into account the many factors interacting to set levels of employment. Many models have been constructed or proposed; none have been adequately tested. Consequently, no definitive specification of data requirements for long-range analytical forecasting is yet within the realm of possibility. It seems certain, however, that data of increasing refinement and diversity are essential, since adequate forecasts demand increasingly complex models. Because, as has been noticed previously, data requirements arise in response to types and characteristics of specific problems, it is apparent that the only available means to estimate roughly the extent of those needs for long-range employment forecasting lies in the study of techniques and procedures already put to use in the foremost existing studies.

It is a happy circumstance that the most elaborate regional forecasting apparatus thus far developed probably represents the finest synthesis to date of thought and experience in regional analysis. This is the model (or perhaps,



integrated group of models) constructed as part of the New York Metropolitan Region Study, whose goal was to analyze the key economic and demographic features of the New York Region and project them to 1965, 1975, and 1985.<sup>1</sup> As a methodological example, the study has already affected new analyses of other regions, especially the current Pittsburgh Regional Economic Study conducted by Edgar M. Hoover and others previously associated with the New York project. And, because of the overall excellence of the New York Study, with its easily obtainable published reports, it is uniquely fitted to serve, here, as a vehicle for general consideration of analytical forecasting models and their data needs.

Among the major values of the approach taken by the New York Metropolitan Region Study, and most analytical models, is the fact that it permits the forecasting model to become more than just a device for making a projection. The nature of the model, its characteristics (including data requirements), and its assumptions, are all specified in full detail. As a result, one is better able to determine for himself the degree of reliance to be placed upon the projections.

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<sup>1</sup>The following books, all from the Harvard University Press, Cambridge, published during 1959-61, detail the findings and techniques of the study:

- (1) Edgar M. Hoover and Raymond Vernon, Anatomy of a Metropolis.
- (2) Roy B. Helfgott, W. Eric Gustafson, and James M. Hund, edited by Max Hall, Made in New York.
- (3) Oscar Handlin, The Newcomers.
- (4) Martin Segal, Wages in the Metropolis.
- (5) Sidney M. Robbins, Ira O. Scott, and Nestor E. Terleckyj, Money Metropolis.
- (6) Benjamin Chinitz, Freight and the Metropolis.
- (7) Robert C. Wood, 1400 Governments.
- (8) Robert M. Lichtenberg, with Edgar M. Hoover and Louise P. Lerda, One-Tenth of a Nation.
- (9) Raymond Vernon, Metropolis 1985.
- (10) Barbara R. Berman, Benjamin Chinitz, and Edgar M. Hoover, Projection of a Metropolis, (Technical Supplement).

The last three of the above are of particular interest to those interested in forecasting methods.

The study, sponsored by the Regional Plan Association, a non-profit research and planning agency, was supported by funds from a number of sources including the Ford Foundation and Rockefeller Brothers Fund. It was conducted by the Graduate School of Public Administration of Harvard University with assistance from other university faculties, government organizations, and private groups and individuals.



Moreover, as new data are received, such as information from the 1960 Census, it is possible to exchange them for data used earlier and to revise the model's projections. Similarly, if an assumption is thought to be invalid, it too may be changed and a revision obtained. With such flexibility, one can forecast not only what is expected to happen, but also what might happen under differing sets of variable circumstances. Thus, when a government or other agency finds it possible to influence the future, its alternative actions may be evaluated by prediction of their various outcomes.

Recognition of and allowance for the interdependence of major economic and demographic variables is another valuable asset of the New York model, which, through a system of equations, provides projections not only of employment demand and supply, but also of output and value added by industry, their allocation by type of demand, and estimation of population and personal disposable income as well. All projections are determined simultaneously in the mathematical sense; every variable is forecast in consistency with each of the others. This is possible partly because of the precise postulation of relationships among the major variables and partly because of techniques of econometric model building and input-output analysis. The authors of the model make no special claims for the accuracy of its projections. They admit the possibilities of occasional crudity in mechanics or error in assumptions, and they recognize that their refinement of method may exceed the refinement of data. However, by detailed specification of assumptions, relationships, techniques, and data sources, the model permits allowances for such problems and modifications as later experience may dictate.<sup>1</sup>

The steps in the generation of projections for the New York Region may be considered as having occurred in four major phases, each of which provided data for the next even though they differed in their principal goals, techniques, and data requirements and overlapped somewhat in time sequence. The first stage was concerned with projections of various aspects of national growth on the eminently justifiable assumption that many of the forces therein involved also affect the growth patterns of individual regions. This was followed in the second stage by determinations of the region's share in the national growth, particularly its share of the demand for goods and services in national markets, the demand in the base study sense for the region's exports. The next stage used these results, and additional information, to generate employment projections for both the national market industries and those serving the region.

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<sup>1</sup>Additional detail on the points to be discussed here may be found in Berman, Chinitz, and Hoover, op. cit., and in the other publications, earlier cited, of the New York Metropolitan Region Study. Vernon, Metropolis 1985, pp. 190-227, gives a shorter and less technical account of the forecasting methods than does the book by Berman, et al.

Input-output analysis, used in two of the stages of the projections, has an extensive literature. For discussions of the nature and limitations of this technique, see Hollis B. Chenery and Paul G. Clark, Interindustry Economics, (New York; Wiley, 1959); National Bureau of Economic Research, Input-Output Analysis: An Appraisal, Studies in Income and Wealth, Vol. 18, (Princeton: Princeton University Press, 1955); or Isard, op. cit., Ch. 8, "Interregional and Regional Input-Output Techniques," and Ch. 12, "Channels of Synthesis." The latter chapter indicates applications of input-output techniques in conjunction with other analytical procedures.

Finally, in the last phase, forecasts were produced for sub-areas within the region. Wherever possible, individual projections in each stage were tested by checking their consistency with estimates made by other means and against such constraints on growth as, for example, the availability of land.

At a number of points the projection techniques were dictated by the availability of data rather than by purely economic or demographic considerations. Sadly, compromises of this sort are inevitable, their only redeeming value being the provision of indications for the development of future data programs. To appreciate the nature of these compromises, and the specific requirements for data, both filled and unfilled, it is necessary to investigate more closely the model's projection techniques.

Little new ground was broken by the study in its projections of national growth which began with population, Bureau of the Census projections being accepted with some minor modifications. Subsequent projections of the labor force were developed on the basis of the population estimates and projections of national age-sex participation rates. From the total labor force an employment figure was extracted by subtracting estimations of numbers in the Armed Forces and "normal" unemployed. For later use, the employment total was converted to a "full-time equivalent" figure, allowing for the expectation of more rapid growth of part-time rather than full-time employment and also of probable shortening of the full-time work week. Implicit in all these projections and in those that follow are requirements for data on national trends: in labor force, employment, unemployment, size of the Armed Forces, and so on.

The nation's gross national product was next estimated, taking into account assumptions on anticipated changes in rates of productivity (as measured by output per full-time equivalent employee). Output thus projected was allocated according to sources of demand to consumption, investment, governments, and the foreign sector; and these allocations were further broken down into specific goods and services categories, allowing in general for the continuance of existing trends in output series. Having specified by this approach the projected elements of final demand, it was necessary to determine how much of raw materials, intermediate goods, new machinery, services, et cetera, would be needed to produce the demanded output. Despite its special limitations and difficult data requirements, interindustry, or input-output, analysis was used at this point as the only technique which could reasonably project allocations of each major industry's products to the other industries that use them.<sup>1</sup>

The final goal of this first phase was the projection of employment totals by industrial sectors. Demand for each industry's products could be converted to employment by projecting the relationships between output and labor requirements. This was done with the help of trends obtained through statistical regression analysis. Employment was then estimated for twenty-eight industries ranging from "agriculture and fisheries" to "government and government enterprises," eighteen of them falling under the general classification of manufacturing.

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<sup>1</sup>See note, p. 89, supra, and the more detailed discussion of data needs for input-output analysis which follows on pp. 94-95, where its use in the third phase is discussed.



Since the primary concern here is with small area data needs, it seems unnecessary to explore further these requirements for national data, though it must be borne in mind that they are essential to projections for such areas as the New York Region where industries selling to nationwide markets, and so responsive to national demand, account for approximately forty per cent of employment. It would appear that Pennsylvania's major economic regions show similar percentages. In cases such as these where the proportion of export employment is large, an area's growth rate tends to follow that of the national demand for its principal exports. Whether regional growth will exceed or fall short of the national average probably depends upon the rapidity of growth in the national demand for the region's mixture of products.

The second major phase in the development of projections in the New York Study was mainly concerned with the region's changing competitive position in national market activities so that regional shares in the projected national demand could be estimated. Several key industries, including women's apparel, printing and publishing, electronics, and finance, were independently subjected to intensive study; and provisional projections were made of their regional employment.<sup>1</sup> The other national market industries were grouped according to the dominant forces influencing their location. Investigation of each group determined the extent to which, and reasons why, the region's share of group output was increasing or decreasing relative to that of the rest of the nation. From this analysis, also, were derived employment projections.<sup>2</sup>

The variety and breadth of the component parts of these industry studies are too great to permit quick summarization either of their techniques or of their data requirements. Among the principal data needs, however, were those for regional employment by industry classified further into national and local market sectors, similar data on other regions for purposes of comparative analysis, and information to permit identification of key factors, such as labor or transportation costs, in the location of industry.<sup>3</sup>

Once the provisional forecasts of national-market employment in the region were completed, it was possible to proceed with the third phase projections of the local-market employment arising from the activity characterized by several of the authors as "taking in one another's laundry." In conjunction with projection of the size and composition of the "laundry bundle," so that

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<sup>1</sup>See Helfgott, et al., op. cit.; Robbins, et al., op. cit.; and Chinitz, op. cit.

<sup>2</sup>See Lichtenberg, et al., op. cit. A summary of the competitive forces operating in these industries appears in Vernon, op. cit., Ch. 4-6.

<sup>3</sup>The great importance of the results of the analyses in this phase speaks for itself: the New York Region's share of total employment in the National-market industries (now slightly more than ten per cent) is expected to be maintained or even increased through 1985, despite the fact that the competitive position of the region has been slipping in recent years for many industries and is expected to continue to do so. The explanation for the apparent inconsistency, of course, lies in the nature and composition of the region's mix of industries. Its concentration of industries with comparatively high national growth rates is expected to provide employment growth sufficient to offset the losses which will occur from decline in competitive position.



overall regional employment demand could be indicated, there was an additional task for the third phase: the provision of consistency among the various population, employment, production, and other forecasts. It was primarily this latter requirement which dictated the construction of an elaborate econometric regional forecasting model.<sup>1</sup>

For this purpose, a number of economic assumptions were required, among them that growth in demand for a region's output implies growth in demand for labor, and that such part of the labor supply to fill the demand as does not derive from population growth or increased participation in the labor force will be furnished by migration. Since migration can drastically affect population size, regional population may, to a considerable extent, be dependent upon employment demand, with growth in population producing additional local-market employment, and continuation of this interaction accentuating the need for simultaneous determination of population and employment forecasts.

The specification of relationships for the model began with the division of the region's industry into two groups: first, those selling primarily in the national market, and second, the others, including suppliers of the national-market firms. In theory, as the authors point out, it would have been desirable to refine these classifications to the point at which no industry group served both national and local markets; but it would have been impractical to do so for several reasons including data availability. The compromise provided forty-three industry classifications: ten purely local-market, eight purely national-market, and twenty-five mixed. In the mixed category, it was necessary to distinguish between products sold nationally and locally.

According to source of demand, the local-market output was still further subdivided by business, consumer, and government purchasers, since major differences existing in the economics of demand for each of these categories had to be reflected in a mathematical specification of relationships. For each group of buyers a set of equations was then developed which described how the group's demand for output of a particular industry depended upon certain variables. As an example of one equation in the set for one demand group, the dollar value of output of the electric power industry was expressed as the sum of the demands (inputs) of all of the forty-three industries. In the algebraic expression of this sum each term consisted of the value of output of the industry it represented and a coefficient expressing the proportion of that value spent on electricity. While these terms expressed only demand for purposes of production, another type of demand was also possible for capital goods to expand productive capacity. Therefore, the addition of another term became necessary for each of the output equations to include this type of demand. Still other terms indicated the effects of factors in consumer and government purchases, thus completing the representation of the structure of local demand. Finally, that the set of equations might express total demand, a national demand component was added, one which, of course, was zero for industries

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<sup>1</sup>The technical nature of an econometric model is such as to preclude any precise statement of its details without resorting to mathematical exposition. If further information is desired beyond that given here, see Berman, *et al.*, *op. cit.* and the earlier cited references to econometric and input-output techniques.

having only a local market.<sup>1</sup>

Still more equations were necessary to relate the region's population and disposable personal income to total employment, to express other non-industrial components of total employment, and to complete the system by expressing total employment as the sum of its parts. Including these, the system at this point contained forty-seven equations, as yet composed only of symbols, expressing not only the relationships among the cited variables but also the net effects of other factors operating upon them.

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<sup>1</sup>Mathematically, where  $X_i^t$  is the dollar value of output of the  $i$ th industry in year  $t$ ;  $X_{iL}^t$ , the total local demand in year  $t$  for output from the  $i$ th industry; and  $X_{iN}^t$ , total national demand; so that

$$X_i^t = X_{iL}^t + X_{iN}^t ;$$

then,

$$X_{iL}^t = a_{i1} X_1^t + a_{i2} X_2^t + \dots + a_{i,43} X_{43}^t$$

(Business demand for production purposes from local industry)

$$+ \frac{c_{i,1}}{10} \left( X_1^t - X_1^{t-10} \right) + \dots + \frac{c_{i,43}}{10} \left( X_{43}^t - X_{43}^{t-10} \right)$$

(Business demand for capital goods from local industry)

$$+ d_i P^t + f_i Y^t + a_{ig}^t P^t + b_{ig}^t$$

(Consumer demand  
from local industry)

(Government demand  
from local industry)

( $i = 1, 2, \dots, 43$ )

where the  $a_{ij}$ ,  $c_{ij}$ ,  $d_i$ ,  $f_i$ ,  $a_{ig}$  and  $b_{ig}$  are appropriately determined coefficients;  $P^t$  is population, and  $Y^t$  is personal disposable income, for the region, in the year  $t$ .

See Berman, et al., op. cit., pp. 4-6, for further discussion of the meaning of the symbols used.

Thus far in the development of the regional model, the efforts were largely non-statistical, although, of course, a great deal of accumulated experience and observation, including that of the earlier phases of the study, entered into the specification of the economic relationships. The major remaining task of model construction, one requiring considerable data, was the estimation of numerical constants to replace the symbolic coefficients and to permit both the solution of the system of equations for its remaining output and employment unknowns and the development of the additional estimates which the model can produce.

Regional data would have been appropriate, on the interindustry input and output flows, capital expenditures, consumer demand, government expenditures and employment, incomes of residents, productivity of workers, profits, taxes, equipment depreciation, and other items, in order to facilitate estimation of the constants (or parameters) of the model. Unfortunately, such regional data often did not exist, and alternative information had to be procured. For example, to estimate the input-output flow coefficients,<sup>1</sup> it was necessary to use the coefficients prepared by the Bureau of Labor Statistics for the United States economy as of 1947. These were inadequate for a number of reasons, among them, the staleness of the data from which they were computed and the fact that regional performance may differ from national. Various adjustment procedures were required to revise the Bureau of Labor Statistics coefficients into appropriate estimates for a regional forecasting model.

The flow and capital coefficients were parameters descriptive of business purchases. Still others were estimated to describe the behavior of consumer expenditures. Such consumption parameters were estimated from a series of approximations, beginning with trends in national consumer expenditures as reflected in data available from 1929 on, with subsequent adjustments for the region based in part on family interview data collected in 1950.<sup>2</sup>

After preliminary estimates of regional input-output and consumption coefficients were obtained, other estimates were made for the year 1954 of government demand, investment, personal disposable income, and population in the region. By application of all these estimated figures, the adequacy of the procedures followed thus far was now tested to determine whether elements of the model could generate the actual 1954 figures for employment and production. Data from the United States Census of Manufactures of that year were the basis for the "actual" figures, although it was necessary to make the census data conform to the model's industry classification scheme,

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<sup>1</sup>These coefficients, the  $a_{ij}$  in the equations, are ratios of amount purchased by a given industry of the output of another (numerator) to the total output of the purchasing industry (denominator). These ratios are assumed to remain constant both for varying outputs of the given industry and over different time periods and hence could serve as parameters along with kindred capital coefficients ( $c_{ij}$ ) and others in the total industry demand equations of the model.

See Berman, et al., *op. cit.*, pp. 10-14, for additional detail on estimation procedures and their data requirements.

<sup>2</sup>Study of Consumer Expenditures, Incomes, and Savings, 18 vols., Wharton School of Finance and Commerce, University of Pennsylvania, (Philadelphia: 1957).



and to the division of output into local-market and national-market sectors. Also, the census data on value added had to be inflated to become value of output; and certain other items, nonmanufacturing industry outputs, for example, required estimation. The contrast between totals from the model and totals based on the census information showed a difference of the order of five per cent for the grand totals of the sections tested but much larger discrepancies for the individual sector totals. How much of this difference stemmed from error in the economics of the model and how much was the result of the unavailability of appropriate data or error in the data used can not be determined. It is unfortunate that, because of the confusion of sources of error, the comparison was not a true test of the adequacy of the model. However, the test did provide an opportunity to develop correction factors for the model. Through these, the parameters were adjusted to fit the 1954 structure of the New York region's economy, so that the model, whatever its faults, at least conformed to the situation in 1954.

At this stage still other parameters were required. Those describing the contribution of government bodies to the region's economy were developed in a separate study<sup>1</sup> whose data needs included federal, state, and local government employment and expenditures on payrolls, capital improvements, and other items. Additional key parameters were labor input coefficients, ratios of employment to output in an industry sector. These multiple-purpose parameters showed the effects of changing technology in the region, converted value of output into employment (or vice versa), and helped to determine the increase to be expected in disposable income per employed person for anticipated increases in productivity. Data from the 1954 Census of Manufactures were again a basis for estimation in a not entirely adequate procedure dictated by lack of regional statistics. The 1954 productivity ratios obtained from the census data were projected by taking the regression estimates of the national trends mentioned earlier and deriving regional estimates for appropriate years by assuming that the percentage changes observed for the nation would be matched by like percentage changes in the region. Still more parameters to be projected were those required to relate personal disposable income and population to total regional employment. Labor force participation rates were necessary here, but since they were developed in the course of Hoover's separate demographic projections, their discussion may be deferred. Finally, the earlier mentioned estimates of national-market demand, reflected in the provisional employment projections made separately in the special industry studies, were converted to output equivalents so as to enter the model as components of the industry demand equations.

The solution of the system for the desired estimates of industry employment and output for any given year was surprisingly simple, once the constants were known.<sup>2</sup> Should the solution produce an estimate of regional population larger than demographic trends might warrant (it did not do so), the constraints imposed upon the model because of anticipated labor shortage could be expressed algebraically and a new and consistent solution produced.

The needs for such constraints and for the determination of participation rates for the regional model dictated independent demographic projections of

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<sup>1</sup>Wood, *op. cit.*

<sup>2</sup>See Berman, *et al.*, *op. cit.*, pp. 8-9.

population and the labor force. The procedures for the purpose were typical of the approach generally used in such demographic projections.<sup>1</sup> In this method of obtaining forecasts of the labor force, the first step is projection of the population by age and sex group (and by other characteristics if necessary). The projected number of persons in each group is then multiplied by its projected labor force participation rate (the proportion of a specific age, sex, or ethnic group within the population either working or seeking work) to determine how many may actually be in the labor force. It follows that the total projected labor force is merely the sum of these group totals; and that the principal data requirement, apart from the needs for population forecasting, is information on the nature of "participation" and the factors which influence it.

Participation rates vary widely, not only among groups but also among areas. Such variation, of course, is affected to no little extent by area differences in population composition. But meaningful area variation, that not explainable by differences in participation among groups, is the result of differences in area customs, job opportunities, and other factors changing participation rates within groups. To illustrate such area variation with an extreme case, the New York Region's participation rate for males aged 14 to 19 years in 1950 was 27.5 per cent, a not unexpected departure from the national rate of 53.2 per cent, considering the known tendency of the region's youth to remain longer in school. It is obvious, then, that small area labor force participation rates, and information on their trends of change, are necessary data for both forecasting and general labor force analysis.<sup>2</sup>

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<sup>1</sup>See Edgar M. Hoover, "Demographic Projections for the Region as a Whole," Part II, of Berman, et al., op. cit. For comparisons of Hoover's approach with other instances of demographic projections of the labor force, see, among the many possible references, Gladys L. Palmer and Ann Ratner, Labor Force Estimates for Philadelphia and Environs with a Projection for 1950, Industrial Research Department, Wharton School of Finance and Commerce, University of Pennsylvania, (Philadelphia: 1946). Additional discussion of the problem of using demographic data for metropolitan area estimates of labor force and employment appears in the appendix by Palmer and Ratner to Louis J. Ducoff and Margaret J. Hagood, Labor Force Definition and Measurement, (New York: Social Science Research Council, 1947).

A discussion of basic demographic procedures as applied to national labor force estimates appears in Bancroft, op. cit., pp. 131-145 and pp. 176-182.

<sup>2</sup>The quoted rates appear in Berman, et al., op. cit., p. 72. Because of the lack of data, little is known about the extent of variability of group participation rates in small areas. Information for chronically depressed areas is particularly needed to indicate the differences between actual group participation as opposed to potential participation under improved economic conditions. Moreover, there are unanswered questions of seasonal fluctuation in the rates, of part-time versus full-time participation in the labor force, and of effects of institutional changes such as the trend toward earlier retirement.

Clarence D. Long notes that some area rates have shown a surprising stability over time when standardized to compensate for the changing age composition of the area's population, and that the age-standardized rates for men and women, and for white and non-white have shown tendencies for convergence, indicating a trend toward offsetting changes and over-all stability in the growth of the labor force. See Long, The Labor Force Under Changing



The remaining phase of the New York Metropolitan Region Study provided projections for the region's sub-areas. Here the problem was one of investigating intraregional differences, the forces causing them, and the changes which could be expected in these forces in the future. For employment, the approach was generally one of projection by taking a county's 1956 relative share of regional employment in a given economic sector and multiplying it by the projected regional total for that sector. Allowances were made for the changing intraregional mix of activities which, as for regions, produce in some areas greater overall rates of employment growth than in others. Information, already produced by earlier parts of the study, on intraregional activity and, more especially, on location factors, was put to judicious use. A series of allocation procedures rather than a single mathematical model was employed to derive the precise figures of the final projections, although equations relating some of the consumer oriented activities to population and others projecting the output of manufacturing industries selling to other manufacturing industries were of assistance. In general, the data requirements for smaller areas were analogous to needs for the earlier regional projections, with the exception, of course, of data used specifically for the regional input-output model. Both the procedures and the data needs of this phase of the New York Study are typical, it should be added, of the small-area forecasting methods often used when series or projections are available only for large areas of which the smaller areas are components.<sup>1</sup>

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(Footnote continued)

Income and Employment, (Princeton: National Bureau of Economic Research, Princeton University Press, 1958), pp. 21-26 and Ch. 12-13. However, Long's evidence seems not as extensive as might be desired.

In connection with demographic projections of the labor force generally, it is interesting that, at the national level where Current Population Survey information is available, the accumulation of five years of additional data from 1957 to 1962 resulted in downward adjustments of the Bureau of Labor Statistics participation rates for young men, and men aged 65 and over. These revisions were principally responsible for the consequent 1.6 per cent reduction in the Bureau's 1959 U. S. labor force projection for 1970. See Sophia Cooper, Interim Revised Projections of U. S. Labor Force, 1965-1975, Special Labor Force Report No. 24, (Washington: U. S. Department of Labor, Bureau of Labor Statistics, 1962).

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<sup>1</sup>For additional detail on the subregional projections, see Benjamin Chinitz, "Employment Projections for Parts of the Region," and Edgar M. Hoover, "Projections of Population Change Within the Region," in Berman, et al., op. cit.

A different version of the "regional shares" approach is discussed by Louis Delwart and Sidney Sonenblum, "Regional Account Projections in the Context of National Projections," in Werner Hochwald, ed., Design of Regional Accounts, (Baltimore: Johns Hopkins Press, 1961). For illustration of their approach, see the National and Regional Economic Projections Series of the National Planning Association. An economic base study using a similar approach for employment projection is the U. S. Department of Commerce, Office of Business Economics, Economic Base Survey of the Potomac River Area, (Washington: Government Printing Office, 1961), a study prepared for the U. S. Army Corps of Engineers.



Considering the rapidity of recent developments in the theory and techniques of regional analysis, it is difficult to assess the extent to which such a study as that of the New York Region can indicate the pattern of future data requirements for regional employment forecasting. Many alternative models of regional growth are possible, as has already been noted, and many other forecasting approaches as well,<sup>1</sup> most requiring far more extensive testing than they have heretofore had. And, of course, provision of adequate data is essential to such testing. Some of the alternative techniques, such as mathematical programming, have even more elaborate data requirements than those of the none too simple input-output analysis. On the whole, however, base studies, location studies, and input-output analysis appear to be the techniques with the most secure future as contributors to the forecasting process.<sup>2</sup> The state of the forecasting art, now, and in the immediately foreseeable future, should guarantee a continuation, not necessarily of the precise techniques of the New York Metropolitan Region Study, but certainly of its eclectic and pragmatic combination of historical and economic analysis, and hence, of its general data needs.

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<sup>1</sup>The article "Regional Economics: A Survey" by John R. Meyer, American Economic Review, LIII, (March 1963), and the many references included in its bibliography, provide ample evidence of this. Isard, op. cit., in Chapters on "Industrial Complex Analysis," "Interregional Linear Programming," "Gravity, Potential, and Spatial Interaction Models," and "Channels of Synthesis" is additionally illustrative.

<sup>2</sup>Additional instances of the application of input-output analysis could be cited, among them the Metropolitan St. Louis Survey of 1956-57 which obtained data directly from firms in order to estimate its input-output coefficients. See John C. Bollens, ed., Exploring the Metropolitan Community, (Berkeley and Los Angeles: University of California Press, 1961), pp. 369-403. The Chicago Area Transportation Study experimented with several alternative input-output models. See Irving Hoch, Forecasting Economic Activity: Regional Input-Output Analysis, (Chicago: Chicago Area Transportation Study, 1958). Neither study made as explicit use of industrial location analysis as did the New York Region Study.

The chief flaws in all input-output analyses are the assumptions that relative prices and technology are constant (or as in the New York model, that a simple approximation of the effects of technological change will be adequate). Forecasting error will undoubtedly arise from changes in these factors, whether input-output analysis or any other forecasting approach is used, until such time as a model is developed which makes specific provision for these changes.

## Nature and Quality of Available Data

### Types of Data Sources

Published data on the labor force derive from three principal sources: households, employers, and reports by government activities for which data collection is a by-product of other concerns. Household data are obtained through the decennial censuses of population. These censuses provide most statistics by residence for small areas. Labor force data are obtained from employers by the censuses of industry and also the Departments of Labor and Agriculture. Such data are obtained mainly from payroll records, so they deal with the individual according to his place of work rather than his residence and often, as mentioned earlier, count the multiple jobholder more than once. Administrative reports of governments, the remaining major source of labor information, may provide data either by place of work or by area of residence. In this category, the activities of the Bureau of Employment Security and its affiliated state employment agencies are of major interest.

As might be expected with such a variety of sources, there are serious problems of inconsistency among the series they produce. A certain amount of duplication also occurs, some of which may actually be desirable, since alternative estimates of the same or closely related magnitudes are often useful for checking the accuracy of each of the series and for permitting identification of real changes in the underlying economic variables (as opposed to the chance variations inevitably present in such data).

Each source naturally has its advantages and disadvantages. The population censuses alone make possible coverage of the entire population, including persons not in the labor force but available for work under special circumstances, the self-employed, domestic help, and all such categories of individuals who cannot be included in employer reports. They alone provide an unduplicated count of persons, and permit the collection of individual detail on subjects not ordinarily available from payroll records, such as education, race, marital status, and others. Yet personal recollection of hours worked, wage and salary information, and the like, cannot form the basis of data as reliable as those to be gathered from payroll records. And, of course, the questionnaire, answered routinely from employer records, is a far less expensive and more rapid means of collecting data than the household interview. Both establishment and administrative data, because of their low cost, offer the advantage of fine and frequent detail. But administrative data possess the serious defect of incomplete coverage, pertaining as they do only to workers eligible for participation in a specific program.

In the following discussion of the sources and nature of data, the sequence of presentation will reflect that of the needs for specific types of analyses discussed in the preceding chapter.

### Data for Base Studies: Industry Employment

Base studies, as previously described, have the principal data requirement of employment totals for each of the major industries in a given area. Industry data, however, also have many other uses, and should be treated as a major data type. Because of the variety of sources (national censuses of



population, business, manufactures, mineral industries, agriculture, governments, other local censuses, and the reporting programs of various government agencies) a comparative study is necessary of the nature and limitations of the different available series.

All major sources follow the classification system provided by the Bureau of the Budget in its Standard Industrial Classification (SIC) system,<sup>1</sup> an understanding of which is prerequisite to any discussion of data by industry. Under this system, an industry is a grouping of establishments (rather than companies) classified by major line of economic activity, such as products made, materials consumed, process used, or service furnished. An elaborate numerical code is employed to permit the categorization of activities. Major activities are specified by two digit categories, (for instance, food and kindred products are coded 20; tobacco manufactures, 21), within which, additional digits permit more detail. Food and kindred products, for example, may be subdivided into classifications like dairy products (202), which may again be subdivided into fourth digit categories like fluid milk (2026), and further into bottled milk and cream (20262) and still further into, say, heavy cream (20262 32). Published data appear according to selections or combinations of these categories and often may be described as providing two-, three-, or four-digit industry detail, according to the source concerned. The flexibility of this system suits admirably the needs of base studies for detail corresponding to the degree of importance of area industries.

As the structure of industry and the nature or importance of its components have altered, the classification system, too, has necessarily changed. Major revisions were made in 1945 and 1947, bringing about shifts that destroyed the comparability between time periods of even certain of the two-digit major industry groups.

Adjustment to restore comparability, however, is not difficult in cases where past data may be sorted by the product lines whose industry classifications have been changed and reclassified according to the revised system. Nearly all publications of industry data include a note on the extent of comparability with earlier reports in the same series and the actions taken, if any, to compensate for changes in classification.

Despite the detail of the Standard Industrial Classification system, perfectly uniform classifications among all the sources of data, or even within reports from a single source, are impossible. Differences in the definition of an establishment, for instance, in multi-plant or multi-office firms, may affect industry employment totals both among areas and for given industries within an area, so that measurements by different agencies of apparently the same employment category need not agree.

Another possible confusion in industry data arising from the classification system is introduced by the need to classify multi-product firms according to primary product, when such product is defined as that of greatest value. Hence, it may be that actual employment in an industrial classification may be seriously understated because the bulk of it takes place in the secondary

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<sup>1</sup> U. S. Bureau of the Budget, Standard Industrial Classification Manual, 1957, (Washington: Government Printing Office, 1957).



activities of establishments classified elsewhere. The problem becomes particularly acute in a study that requires fine detail for the purpose of testing hypotheses about factors in the location of industry or other aspects of regional economic development.

With the existence of so many sources of industry data, it would seem that one studying the economic base of an area could meet his varying needs for detail by making thoughtful selection from the different types of series offered. Unfortunately because of the inconsistencies among the sources, this is not the case. Moreover, there is only one source, the decennial Census of Population which furnishes employment data in all of the major industry classifications; for by their very nature, the others, such as the Census of Manufactures, are limited to specific categories of employment. Population Census data are, then, considered first, even though their availability only at ten year intervals severely limits their usefulness.

The 1960 Population Census provided employment figures for forty industry classifications, ranging from agriculture, forestry and fisheries, and mining, through fourteen separate manufacturing classifications, to public administration and "industry not reported." The list of industries is noteworthy both as indication of available detail and as suggestion of the extent of individual industry reports that would have been required to duplicate the information by other than the household interview approach.<sup>1</sup>

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<sup>1</sup>The forty industry groups were based on 150 industry categories. The following list indicates the groups, their more important components, and the SIC classifications corresponding to the groups:

1. Agriculture (01, 02, 07 except 0713).
2. Forestry and fisheries (08, 09).
3. Mining (10-14). Includes quarrying, and crude petroleum and natural gas extraction.
4. Construction (15-17).  
Manufacturing (0713, 20-39)
5. Furniture, and lumber and wood products (24, 25). Includes logging and sawmills.
6. Primary metal industries (33). Includes blast furnaces, steel works, and rolling mills.
7. Fabricated metal industries (19, except 194, 34).
8. Machinery, except electrical (35). Includes tractors, and office and store machines.
9. Electrical machinery, equipment, and supplies (36).
10. Motor vehicles and motor vehicle equipment (371).
11. Transportation equipment, except motor vehicle (37 except 371).  
Includes ship and boat repairing.
12. Other durable goods (194, 32, 38, 39). Includes cement; pottery; glass and glass products; concrete, gypsum, plaster, stone, structural clay, and nonmetallic mineral products; professional and photographic equipment and supplies; and watches and clocks.
13. Food and kindred products (0713, 20). Includes grainmill products, confectionery, beverages, and canning and preserving.
14. Textile mill products (22). Includes carpets, knit goods, and dyeing and finishing of textiles.

(continued)

## (Footnote continued)

15. Apparel and other fabricated textile products (23).
16. Printing, publishing, and allied industries (27).
17. Chemicals and allied products (28). Includes synthetic fibers, drugs, medicines, and paints.
18. Other nondurable goods (21, 26, 29-31). Includes paper, pulp, and their products; petroleum refining; footwear; leather; and petroleum, coal, tobacco, rubber, and leather products.
19. Railroads and railway express service (40).
20. Trucking service and warehousing (42).
21. Other transportation (41, 44-47). Includes taxicab service, and petroleum and gasoline pipe lines.
22. Communications (48). Includes telephone and telegraph, both wire and radio, and television.
23. Utilities and sanitary services (49). Includes electric, gas, steam, and water supply.
24. Wholesale trade (50).
25. Food and dairy products stores, and milk retailing (54).
26. Eating and drinking places (58).
27. Other retail trade (52, 53, 55-57, 59).
28. Finance, Insurance, and Real Estate (60-67). Includes banks, credit agencies, and investment companies.
29. Business services (73). Includes advertising, accounting, auditing, and bookkeeping services.
30. Repair services (75, 76). Includes automobile repair services and garages.
31. Private households (88).
32. Other personal services (70, 72). Includes hotels, and lodging places, dressmaking and shoe repair shops, and laundering, cleaning, and dyeing services.
33. Entertainment and Recreation Services (78-79). Includes radio broadcasting, theatres, motion pictures, bowling alleys, and billiard parlors.
34. Hospitals (806).
35. Educational services, government) (82, 84).
36. Educational services, private )
37. Welfare, religious and nonprofit membership organizations (86).
38. Other professional and related services (80 except 806, 81, 89).
39. Public Administration (91-94). Includes postal service, and Federal, State and local public administration.
40. Industry not reported (99).

More complete information on the classification system appears in U. S. Bureau of the Census, 1960 Census of Population, Classified Index of Occupations and Industries, (Washington: Government Printing Office, 1960).

Employment totals in each category are furnished for Standard Metropolitan Statistical Areas, counties, urbanized areas, and urban places and selected townships of 10,000 or more population.<sup>1</sup> In addition, a fourteen industry classification of data was provided for urban places of 2500 to 10,000 population. Beyond this, the Pennsylvania Department of Internal Affairs, by purchase of unpublished data from the Census Bureau, has been able to provide a series of County Labor Force Reports with data on twenty-seven classifications of industry for the minor civil divisions (cities, boroughs, and townships) of counties not included in the areas for which similar information by Census tract is available.<sup>2</sup> The Census Bureau, of course, published data in similar detail for areas contiguous to Pennsylvania, so that employment for economic regions extending past state lines may be aggregated from the small area totals.

All of the industry statistics are estimates based on the 25 per cent sample of the population and hence subject to sampling error, a variability generally more troublesome the smaller the size of both the geographical area and the total number employed in the industry category. Because of the variability in error, no generalization can be reasonably attempted here about its magnitude. However, procedures for the estimation of sampling error are presented in the introductions to the 1960 census volumes, as is other information on the accuracy of the data.

For reasons to be discussed later, comparability in employment data for censuses before that of 1940 may be obtained only through extensive and difficult adjustments. Differences in coding and editing among the 1940, 1950, and 1960 industry employment data also exist, so that some adjustments are appropriate even for them. Indeed, strictly comparable small area time series for industry based on population census data are not available. If county data are taken from the 1940, 1950, and 1960 reports, caution must be exercised in drawing inferences from small numerical changes. Attempts to use data from earlier censuses should not be made without knowledge of the magnitude of the effect of census-to-census changes upon the data for the specific area concerned.<sup>3</sup>

Many characteristics of census data have already been discussed, among them the definition of employment itself. These data pertain to activity in a particular reference week and, reflecting the seasonal influences present during so limited a period, are not necessarily typical of employment at other times

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<sup>1</sup>U. S. Bureau of the Census, U. S. Census of Population: 1960. General Social and Economic Characteristics, Pennsylvania. Final Report PC(1) - 40C, (Washington: Government Printing Office, 1962), pp. 381-400, 445-472, 494-500. Also, see pp. VIII-X, for the area definitions.

<sup>2</sup>Census tract information appears in U. S. Bureau of the Census, U. S. Censuses of Population and Housing: 1960. Census Tracts, Final Reports in the PHC(1) Series, (Washington: Government Printing Office, 1962).

The County Labor Force Report Series may be obtained from the Bureau of Statistics, Department of Internal Affairs, Commonwealth of Pennsylvania, Harrisburg, Pennsylvania, (1963 LFC Releases).

<sup>3</sup>More extensive discussions of the problem of adjusting industry series from population censuses for comparability appear in the two works by Gladys L. Palmer and Ann Ratner earlier cited.



of the year. The avoidance of double counting, referred to previously, is accomplished by classifying persons employed at more than one job according to the activity at which they worked the greatest number of hours during the census week. In contrast, industry data based on employers reports not only pertain to various reference time periods but also exclude private household workers, unpaid family workers, and self employed persons, while possibly including workers less than 14 years of age. Persons "with a job but not at work" who are "employed" by population census definition are also likely to be excluded from employment figures based on establishment payroll reports. Finally, there is the problem of residence as opposed to place of work, which for the smallest areas, can render the population census data on employment far different from totals for the same time period produced by any other source.

Probably the most detailed employment data available for Pennsylvania are those for the manufacturing industries. Not only is there a quinquennial United States Census of Manufactures but the annual Industrial Census of Pennsylvania, generally comparable with it, conducted by the Bureau of Statistics in the Department of Internal Affairs. Because of the duplication of subject matter and the general data consistency, the two may be considered together.

The current United States data are those of the 1958 Census, published in 1961, the lag in publication, as is the case for all national census information, due to the tremendous volume of data to be processed. Therefore, statistics from the Department of Internal Affairs, which usually appear with less than a one year lag, are generally used in preference to their counterpart when Pennsylvania data alone are required. The annual employment data also appear in finer area and industrial detail than the quinquennial; the latter by standard metropolitan statistical areas and some counties and cities, generally by two- and three-digit classifications; the former for all counties and major cities, boroughs, and townships, by four-digit codes.<sup>1</sup>

All censuses have an error problem arising from incompleteness of coverage. For the manufacturing census, this occurs principally among the

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<sup>1</sup>U. S. Bureau of the Census, U. S. Census of Manufactures: 1958, Pennsylvania, Area Report MC58(3)-37, (Washington: Government Printing Office, 1961). Data on number of establishments, payrolls, production workers alone (numbers, man-hours, and wages), value added by manufacture, value of shipments, and capital expenditures are also furnished.

The Department of Internal Affairs publishes industry data in a series of topic and area reports. See, for example, 1961 County Industry Reports, Chester County, Release MC-15-61, (Harrisburg: 1962), which contains four-digit data on number of establishments, capital expenditures, total employees, wages and salaries, value of production, and value added by manufacture for the county, its major city, and fifteen boroughs. Financial data are omitted for categories with less than three establishments.

Other publications of data from the Pennsylvania Industrial Census are listed on page 2 of reports in the above cited series. The Bureau of Statistics, Department of Internal Affairs, also publishes an industrial directory (listing all manufacturing establishments by four-digit Standard Industrial Classification with address and number of employees for each plant), additional employment data from its Census of Public Utilities, and other special releases on Pennsylvania industry.

very small establishments. Industries in which the typical establishment is small may have a greater understatement in their totals than others; however, the problem doubtless is less troublesome in manufacturing than in other areas, and is further minimized by collaboration between the census and other government agencies producing data on employment. Unfortunately, no detailed small area studies of this or other error problems currently exist.

Both the Bureau of the Census and the Department of Internal Affairs operate under disclosure rules: regulations to protect the confidentiality of data for individual companies. The rule of the Department of Internal Affairs causes no difficulty, since it applies only to financial information. But when, on the other hand, the rule of the Bureau of the Census requires the withholding of employment figures from the Census of Manufactures, it seriously compromises the usefulness of its small area industry totals by impairing the comparability of data both within a given census and between several. Thus the problem of comparability is compounded, what with the changes in the industrial classification system already noticed.

The 1958 Census of Manufactures publications list 1954 employment data with adjustments for comparability for most entries. However, more lengthy adjusted series have been provided by the Department of Internal Affairs, which presents comparable employment data for 22 industry groups, by county, for 1919, 1930, 1940, 1951, and annually from 1956. All have been revised to conform to the 1957 Standard Industrial Classifications. Data on the two categories of mines and quarries and railroad repair shops are included in addition to the manufacturing employment totals.<sup>1</sup>

These industry data are not comparable with the previously discussed population census series on the grounds there discussed: principally, differences of data by place of work as against those by residence, timing, double-counting, and differing definitions of "employment." Furthermore there would appear to be little or no problem of seasonality in manufacturing census figures, since the employment totals presented are annual averages of data reported for "the pay period ended nearest the 15th" of March, May, August, and November, for production workers, and a "mid-March figure" for all other employees.

Several types of quinquennial United States censuses are useful for base studies. Censuses of Mineral Industries and of Business (Wholesale, Retail,

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<sup>1</sup>Department of Internal Affairs, Employment by Broad Industry Groups and by County for Selected Years: 1919-1961, Release S-10, (Harrisburg: 1963).

The problem of obtaining comparability in these data can be troublesome where adjustments have not been made by the agency source. For an illustration, see the discussion of the adjustments necessary in U. S. Census of Manufactures data, for non-disclosure, industry classification, and geographical coverage, in Lichtenberg, et al., op. cit., pp. 249-251, 272-278.

Additional information on the comparability of these data may be found in the U. S. Bureau of the Census publications, Historical Comparability of Census of Manufactures Industries 1929-1958, Working Paper No. 9, 1959; and U. S. Census of Manufactures: 1958, MC58-300, Numerical List of Manufactured Products, 1960, (Washington: Government Printing Office).



and Services) were conducted jointly with the Census of Manufactures in 1958. The employment data produced, however, differ among these in some respects. In the Census of Mineral Industries, average annual employment is shown by county for various two-and three-digit industry groups, along with comparable data for 1954.<sup>1</sup> The Censuses of Business provide employment totals for the work week ended nearest November 15, with "full workweek" employment shown separately. Areas for these are Standard Metropolitan Statistical Areas, counties, and cities of 2500 or more inhabitants, with industry detail at times extending to four-digit classifications.<sup>2</sup> In general these censuses have error and comparability problems similar to those for the Census of Manufactures. The same disclosure rules apply. Classification changes have been made among censuses, and for areas, urban place and other boundary changes have occurred.

Data on employment in agriculture are also available from quinquennial censuses but different in form from those of the censuses just discussed, partly because of differences inherent in the nature of farming as an industry. The current data are from the census of 1959, a year before the Census of Population and a year after other industry censuses. County data are provided on number of farm operators, unpaid family workers, and hired workers.<sup>3</sup> Farm operator totals are available in classification both by number of hours worked in the reference week, and by number resident and non-resident on the farm operated. Hired workers employed 150 or more days per year are given a separate listing; and still another table provides information for off-the-farm employment of the operators, although not by type of activity.

The reference week for the 1959 Census of Agriculture enumeration varied over a three month period (for most counties in Pennsylvania the week was the last in November). Further within-census variability in the totals may have arisen from sampling error, since farm labor questions were asked only of a sample. Data are not fully comparable between censuses because of

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<sup>1</sup>U. S. Bureau of the Census, U. S. Census of Mineral Industries: 1958, Pennsylvania, Area Report MIC 58(2)-35, (Washington: Government Printing Office, 1961). Additional types of data furnished include number of establishments, payroll, manhours and wages of production workers, value added in mining, cost of supplies and other purchases, value of shipments and receipts, and capital expenditures.

<sup>2</sup>U. S. Bureau of the Census, U. S. Census of Business: 1958,  
 (a) Wholesale Trade, BC 58-WA38, Pennsylvania;  
 (b) Retail Trade, BC 58-RA38, Pennsylvania;  
 (c) Selected Services, BC 58-SA38, Pennsylvania;  
 (Washington: Government Printing Office, 1960). Data in (a) include number of establishments, sales, payroll, and number of proprietors of unincorporated businesses. Data in (b) include establishments, sales, and both total and full workweek payrolls. Data in (c) include establishments, receipts, total and full workweek payrolls, and number of active proprietors.

<sup>3</sup>U. S. Bureau of the Census: U. S. Census of Agriculture: 1959, Vol. I, Counties, Part 9, Pennsylvania, (Washington: Government Printing Office, 1961), pp. 158-163. The introduction provides details on the wide variety of its contents and the limitations of the specific types of data.



the differences in enumeration weeks. Of course, the pronounced seasonality in agriculture magnifies the effect of time disparities; and the characteristic volatility of farm employment dictates that agricultural census employment data be used with caution.

Another more or less quinquennial census is that of governments. Though also conducted by the Bureau of the Census, funds were not made available for its conduct in 1947 and 1952; but data are currently available for 1957, and the 1962 reports are in the process of publication. In 1957, the number of full-time employees was provided for municipalities of 2500 or more persons, full time teachers by minor civil divisions, part-time employees for municipalities with population above 5000, and still additional detail for larger areas. Because all government employment has not been included, and because the census reference date has not corresponded to any of those already cited, the data obviously possess but limited value for base study purposes.

It should be apparent at this point that the industry censuses leave many types of employment unconsidered: construction, transportation, communications, public utilities, finance, insurance, real estate, private education, hospitals and welfare institutions, private household employment, self-employment, and the professions. Population censuses, then, are the only source of consistent data for all major industry classifications at one given point in time, if one is not willing to accept estimates built up from multiple sources of information by analysts such as those in the local agencies of the state employment services.<sup>1</sup>

Of the many data collecting programs under the general aegis of the United States Department of Labor, perhaps the most interesting one for those concerned with small area data is the system for obtaining monthly data on employment. Detailed industry information from this program is published for the Nation, states, and 141 metropolitan areas. In most states, including Pennsylvania, the program is a cooperative one between the Bureau of Labor Statistics and the Bureau of Employment Security. The data come from a monthly sample of establishments whose reports represent more than one-third of the total United States employment. The establishment reports are submitted to the cooperating state agencies who edit the data, use them for preparation of state and area estimates, and finally transmit them to the Bureau of Labor Statistics for the preparation of national totals. These and other estimates for metropolitan areas are published within two months of the reporting date and provide figures for employment in mining, contract construction, manufacturing, transportation and public utilities, trade,

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<sup>1</sup>For base study purposes, the question of superiority of population census data over estimates provided by the labor market analysts of State Bureaus of Employment Security (or comparable agencies) is one that can not be answered conclusively, although it must be considered further in conjunction with other aspects of the Bureau of Labor Statistics--Bureau of Employment Security estimates and again in the evaluation discussion. Both census data and estimates are subject to errors which may be of critical magnitude for small area totals; and no fully adequate means now exists for an accurate evaluation of the extent of such errors from either source.

finance, service, and government.<sup>1</sup>

In the estimating procedures, data from a variety of other sources supplement the information furnished by the sample. Among other sources are the various employer reports of the unemployment insurance system. In particular, annual first-quarter reports on types of employment covered by the unemployment compensation statute serve as bench mark data for revision of the monthly estimates. These first-quarter data, for Pennsylvania, are published by the Department of Labor and Industry, and provide county totals, by two-digit industry codes, for number of workers and wages paid for employment covered by the Pennsylvania Unemployment Compensation Law.<sup>2</sup> These data include all full-time or part-time workers who earn wages during the pay period ending nearest March 15; but they exclude the groups not covered by the compensation law, such as government, railroad, or agricultural workers, the self-employed, and so on, as well as all who, having jobs, for any reason did not receive pay during the reference pay period. In general, the comparability problems of these administrative data are similar to those encountered for the Census of Manufactures. There is also a problem of seasonality in some industries, since only the first-quarter position is shown; and minor difficulties with the county classifications for small multi-plant firms occur when employment at a secondary location in one county may be included in the total for the primary location in another.

These and the other data available to analysts in the local offices of the Pennsylvania State Employment Service, Bureau of Employment Security, serve as the basis of yet more detailed estimates of employment, appearing monthly for the major labor market areas and less frequently for the smaller ones in the Bureau's Labor Market Letters.<sup>3</sup> Two-digit estimates of manu-

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<sup>1</sup>U. S. Department of Labor, Bureau of Labor Statistics, Employment and Earnings, monthly. Each issue contains detailed description of data collection procedures and estimation techniques and comments on the reliability of the data.

Twelve Pennsylvania areas are reported: Allentown-Bethlehem-Easton, Altoona, Erie, Harrisburg, Johnstown, Lancaster, Philadelphia, Pittsburgh, Reading, Scranton, Wilkes-Barre--Hazleton, and York. All are standard metropolitan statistical areas.

Additional information on the procedures and the characteristics of the estimates may be found in U. S. Department of Labor, Bureau of Labor Statistics, Measurement of Employment, Hours, and Earnings in Non-Agricultural Industries, November 1961.

<sup>2</sup>The most recent data are for 1962. See Pennsylvania Department of Labor and Industry, Bureau of Employment Security, Employment and Wages of Workers Covered by the Pennsylvania Unemployment Compensation Law, Statistical Information Bulletin No. 152, April, 1963.

<sup>3</sup>The labor market letters contain hours and earnings information also, and commentaries on local labor market conditions.

In addition, other publications of the Bureau of Employment Security, Department of Labor and Industry, may prove useful. See the monthly Pennsylvania Employment and Earnings, and the bimonthly Manpower Review.

The publications of the Bureau on unemployment will be discussed later.



facturing employment, nonmanufacturing employment by nine major groups (including federal and state and local government), farm employment, and other categories, are provided. Since there is variation in the extent of available information among areas, researchers would do well to check with local Employment Service offices to determine the specific series which may be obtainable.

Problems of error and of comparability, of course, exist in these estimates also. Revisions to new bench mark information are a source of difficulty in attempts to indicate trends. In some of the labor market areas, however, the data have been adjusted to provide consistent monthly data for a decade or more.<sup>1</sup> The chief problem with these estimates is their uncertainty. There is no way, at present, to check their accuracy against information from a complete count of employment, or even to provide estimates of probable estimating error. The Bureau of Employment Security provides a series of technical handbooks with elaborate specifications for estimation procedures, and also an intensive program of training and review. However, it appears that despite these efforts variation exists among areas in the quality of the estimates, and that the accuracy of the estimates decreases with decreasing area size.

Several other sources of industry employment information exist and may at times be useful. Of special note is County Business Patterns, a joint publication of the Bureau of Old-Age and Survivors Insurance and the Bureau of the Census.<sup>2</sup> Its figures reflect the greater coverage of the Social Security old-age retirement insurance program, but here, too, some types of employment are excluded completely and only partial counts provided of the groups who voluntarily participate in the program. The data indicate mid-March

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<sup>1</sup>See, for example, Total Civilian Labor Force, Unemployment, and Employment by Industry: 1949-1957, Philadelphia Labor Market Area, Pennsylvania State Employment Service, 2048 Arch Street, Philadelphia, mimeographed, undated.

Revised State series appear in Pennsylvania Total Civilian Labor Force, Unemployment and Employment: 1950-1961, Research and Statistics Division, Bureau of Employment Security, Department of Labor and Industry, mimeographed, (Harrisburg: June 1962).

More lengthy revision of national estimates has been possible. See U. S. Department of Labor, Bureau of Labor Statistics, Employment and Earnings Statistics for the United States, 1909-60, Bulletin No. 1312, (Washington, Government Printing Office, 1961). These data include monthly employment totals by two, three, and in some cases, four-digit classifications, and are worth inspecting if only to gain insight into the magnitude of the data processing job necessary when such revisions are contemplated. The production of these tables (536 pages of them) would not have been practicable without the availability of an electronic computer.

<sup>2</sup>The County Business Patterns volumes for 1962 are now in the process of publication. Pennsylvania data for 1959 appear in U. S. Bureau of the Census and U. S. Bureau of Old-Age and Survivors Insurance, cooperative report, County Business Patterns, First Quarter 1959, Part 3B, Middle Atlantic States (Pennsylvania), (Washington: Government Printing Office, 1961).



employment, and are shown by county in two-, three-, and four-digit industry classifications. Recently the publication has appeared at three year intervals, the data among editions being comparable except for changes in industry classifications.

The City and County Data Book series of the Census Bureau are useful compendiums of data originally appearing elsewhere and including, together with industry employment, data on population, vital statistics, income, education, housing, and other local statistics. Still other sources could be cited, for example, additional publications of the United States Bureau of Labor Statistics,<sup>1</sup> and finally, there are special studies frequently available for particular areas, conducted by agencies such as universities, planning commissions, and the like.

It should be clear that analysts attempting an economic base study in Pennsylvania face no easy task in assembling a consistent set of current industry data. And, perhaps only half of the overall data problem has thus far been considered. As has been pointed out in the discussion of data needs, industry employment totals must be allocated among demand sectors if formal base analysis is to be attempted, and for this purpose no directly usable published data exist. The solution to the demand sectoring problem, as evidenced by the California study cited earlier, lies in direct questionnaire surveys of firms to determine the markets to which they sell.

#### Data for Employment Planning and Analyses

Besides economic base studies, other types of employment analyses also draw upon the available industry data described above. But generally more useful for investigations of labor supply and demand are occupational data for which again the only comprehensive source is the decennial population census.

In the 1960 Census, the occupational classification system consisted of 297 specific occupation categories, aggregated for small area reporting purposes, into 38 major groups and subgroups.<sup>2</sup> The system was generally

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<sup>1</sup>Publications indexes are obtainable from the Bureau of Labor Statistics, among them, the Guide to Area Employment Statistics, Guide to State Employment Statistics, 1960, and Guide to Employment Statistics for BLS, 1961.

A useful index to general metropolitan data is the publication of the Advisory Commission on Intergovernmental Relations, Directory of Federal Statistics for Metropolitan Areas, (Washington: Government Printing Office, 1962).

<sup>2</sup>The classification system is described in detail in U. S. Bureau of the Census, Classified Index of Occupations and Industries, op. cit. Small area data appear for the following groups:

- Professional, technical, and kindred workers:
  - Engineers, technical.
- Medical and other health workers:
  - Salaried.
  - Self-employed.

(continued)

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(Footnote continued)

Teachers, elementary and secondary schools.  
Other professional, technical, and kindred workers:  
    Salaried.  
    Self-employed.

Farmers and farm managers.  
Managers, officials, and proprietors, except farmers:  
    Salaried.  
    Self-employed:  
        Retail trade.  
        Other than retail trade.

Clerical and kindred workers.  
Sales workers:  
    Retail trade.  
    Other than retail trade.

Craftsmen, foremen, and kindred workers:  
    Foremen not elsewhere classified.  
    Mechanics and repairmen.  
    Metal craftsmen, except mechanics.  
    Construction craftsmen.  
    Other craftsmen.

Operatives and kindred workers:  
    Drivers and deliverymen.  
    Other operatives, etc.:  
        Durable goods manufacturing.  
        Nondurable goods manufacturing.  
        Nonmanufacturing industries.

Private household workers.  
Service workers, except private household:  
    Protective service workers.  
    Waiters, bartenders, cooks, and counter workers.  
    Other service workers.

Farm laborers and farm foremen.  
Laborers, except farm and mine:  
    Construction.  
    Manufacturing.  
    Other industries.

Occupation not reported.

consistent with that of the Dictionary of Occupational Titles,<sup>1</sup> the standard classification guide. Tabulated census data for the occupation categories appeared separately for male and female employment for all standard metropolitan statistical areas, urbanized areas, counties, and urban places and selected townships of 10,000 or more population, the female classifications being slightly less detailed than the male. In addition, abbreviated sets of occupational data appeared for the non-white employed in the same areas, for the rural employment, the rural-farm employment, that of urban places of 2500 to 10,000 population and census tracts. As was the case for the corresponding area industry data, an abbreviated set of twelve occupational categories was furnished for other cities, boroughs, and townships in the County Labor Force Reports of the Pennsylvania Department of Internal Affairs.<sup>2</sup>

These data, too, were estimates based on the 25 per cent sample (as, incidentally, were all data on social and economic characteristics reported in the 1960 census) and hence subject to sampling error. And again, the occupational figures from the 1940, 1950, and 1960 censuses are not strictly comparable, although they are usable where the differences are not too small. Data from earlier censuses are well nigh useless because of problems of consistency.<sup>3</sup>

The 1960 census also provided employment classification according to class of worker. For this type of information, employment was subdivided into the categories of private wage and salary workers, government workers of any type, self-employed persons, and unpaid family workers. These categories were available for the same area and sex classifications as were the occupational data and were comparably treated in the 1940 and 1950 censuses.

Smallest area data on the labor force in the 1960 census include little information beyond that thus far discussed. The census tract volumes and the County Labor Force Reports provide in addition only totals of persons fourteen years old and over, by sex, in the labor force, not in the labor force, in the civilian labor force, employed, unemployed, labor force as a percent of group total, and unemployment as a per cent of civilian labor force. (Male, non-white figures for the above are furnished for some census tracts.) For larger areas the detail furnished on labor force characteristics increases

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<sup>1</sup>U. S. Department of Labor, Bureau of Employment Security, Dictionary of Occupational Titles, Second Edition, Vols. I and II, (Washington: Government Printing Office, 1949).

<sup>2</sup>See footnote, p.103, supra, for the publications in which the foregoing categories of data appear.

<sup>3</sup>Information on the problem of occupational data comparability among censuses before 1940 may be found in Alba M. Edwards, Comparative Statistics for the United States, 1870 to 1940, U. S. Bureau of the Census, Sixteenth Census Reports, 1943.

While occupation data since 1940 are generally comparable, members of the Armed Forces were included in 1940 but not in 1950 and 1960, with consequent problems for the area with a significant percentage of its total population stationed at a military base in the area.



somewhat, but since data were not furnished for all counties, and indexes to this information exist,<sup>1</sup> it is not appropriate to continue its listing here, except to note the availability of one particularly important category: the requisite age and sex totals that permit the calculation of labor force participation rates for standard metropolitan statistical areas, counties, and other major urban places.

In general, the present consideration of available information has been limited to that appearing on a regularly recurrent basis for all areas of the State. Since decennial census data are the only ones so to appear, little is known with reference to the current numbers employed in each major occupation or the current occupational structure existing within industries. And, what with the rapidity of changes in the occupational composition of the labor force and the fact that census data available at present will be approximately twelve years out of date by the time of the publication of the 1970 figures, a significant data deficiency exists which appears the more serious with the realization that nearly one-third of the labor force of 1970 is still in school. The Bureau of Employment Security's local labor market information program provides some information to fill this gap, but to varying degrees in different areas and often without consistent data collection and publication programs.<sup>2</sup> Among the sometime reports of local employment security agencies are area skills surveys and detailed manpower reports for redevelopment areas. Again one should investigate the possibility of special data resources which may only exist for the area in which his interests lie. With these special sources, however, the problems are that they do not provide recurring data and that their conceptual framework may fail to be consistent with that of other sources.<sup>3</sup>

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<sup>1</sup>U. S. Bureau of the Census, U. S. Census of Population: 1960, Availability of Published and Unpublished Data, (Washington: Government Printing Office, 1961).

The "Series PC(1)D, Detailed Characteristics" of the 1960 Census final reports provides both additional subjects and more extensive cross-classifications of the information already discussed here. However, for the most part, these data are only available for standard metropolitan statistical areas of 250,000 or more population, and for the years 1950 and 1960. The earlier cited index, Directory of Federal Statistics for Metropolitan Areas, is additionally useful for these data since it indicates the dates of origin of its referenced series.

<sup>2</sup>Unemployment data, to be discussed later, are an exception to this, as, of course, are the industry data previously discussed. Another continuing program of local labor market information is that of Bureau of Labor Statistics for occupational wage rates. See, for example, U. S. Bureau of Labor Statistics, Occupational Wage Survey, Scranton, Pennsylvania, August 1961, Bulletin No. 1303-8, November 1961. Similar surveys have been made for Philadelphia (Bulletin 1303-25, February 1962), Pittsburgh (Bulletin 1303-35, March 1962), Allentown-Bethlehem-Easton (Bulletin 1303-46, May 1962), and York (Bulletin 1303-49, May 1962), and others, earlier.

<sup>3</sup>As examples of the kinds of data which may be available from special studies, see: Pennsylvania Bureau of Employment Security, The Philadelphia Older Worker Pilot Project, November 1, 1957 through June 30, 1958, (Harrisburg: 1958). Pennsylvania State Employment Service, Philadelphia District Office, Manpower Impact of the Bristol-Morrisville Boom; Report on an Initial Manpower Survey of the Bristol-Morrisville Section of the Philadelphia Labor

In rare instances, surveys have been conducted for metropolitan areas and have provided detail comparable to that produced nationally by the Bureau of the Census's monthly Current Population Survey made for the Bureau of Labor Statistics.<sup>1</sup> This survey has, since 1940, collected from household interviews consistent monthly data on employment by age, sex, color, and marital status with separate data given for wage and salary workers, the self-employed, unpaid family workers, and total agricultural and non-agricultural employment. For wage and salary workers, the survey currently provides occupational classifications for over forty groups and subgroups. Among other data furnished are labor force participation figures and detailed characteristics of the unemployed. And, in addition to the monthly survey, the Census Bureau instituted, in April 1962, its Quarterly Household Survey to provide for special inquiries such as investigation in greater depth of the long-term unemployed. While these surveys produce no small-area data, their national figures may be indicative in some cases of the nature of trends; and, of more significance, perhaps, they provide a model of what a current labor force information system should be. The household surveys are subject, of course, to some of the same problems occurring in censuses, such as interviewing errors (including faulty memory), and sampling variability. But there is no doubt on the part of labor force experts as to the general excellence of the labor force data they produce. Because of the skill and experience of the interviewers and the close supervision they are given, many deem the

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(Footnote continued)

Market Area, September 1951-September 1952, (Philadelphia, December 1951).

Also, the activities of the Bucks County school census indicate another type of potential source for industry and occupation data by residence of worker.

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<sup>1</sup>In 1951 the Bureau of the Census conducted surveys in Philadelphia, Chicago, Los Angeles, San Francisco, St. Paul, and New Haven, in which probability samples of 4000 to 5000 persons 14 years of age or over were interviewed in each city to determine a wide variety of labor force characteristics. War-time labor problems were responsible for other labor force sample surveys in Philadelphia in 1943 and 1944. The 1951 surveys were primarily conducted for information on labor mobility and will be discussed later under that topic. Results of the 1943 and 1944 surveys may be found in Gladys L. Palmer and Sophie T. Cambria, The Manpower Outlook in Philadelphia in 1943, and Gladys L. Palmer and Ann Ratner, The Philadelphia Labor Market in 1944, University of Pennsylvania, Industrial Research Department, Research Reports No. 7 and 8, (Philadelphia: October 1944; November 1944).

Data from the Current Population Survey appear monthly in Employment and Earnings, op. cit., which also includes in its "Explanatory Notes" a detailed description of survey procedures. For a still more complete description, see U. S. Bureau of the Census, The Current Population Survey: A Report on Methodology, Technical Paper No. 7, (Washington: Government Printing Office, 1963). A lengthy critique of the Current Population Survey procedures and data appears in the President's Committee to Appraise Employment and Unemployment Statistics, op. cit., pp. 76-86, and appendices.



Current Population Survey data to be generally more accurate than their decennial census counterparts.<sup>1</sup>

### Labor Mobility Data

Decennial censuses are once more the only regularly available source for labor mobility data, discussion of which has been provided under "Characteristics of the Migrant Population" in the section on population and need not be repeated here. For the most part, available census data are actually more relevant to studies of population migration than to those of labor mobility for their detail is not adequate to shed much light upon the economics of the process by which workers change jobs. Several excellent examples are available, however, of studies using data from special surveys. Anyone who requires mobility data in more detail and over longer periods than those represented by the 1960 Census figures on employment and occupational status of "outmovers from standard metropolitan statistical areas" must unfortunately follow the methodological examples of these special studies and seek his own statistics.<sup>2</sup>

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<sup>1</sup>See Bancroft, op. cit., Appendix A, "Quality of Census Labor Force Data and Methods of Adjustment;" Also, Long, op. cit., pp. 417-418.

<sup>2</sup>Parnes, op. cit., provides an indication of the framework for research, problems of concepts and methods, and the characteristics for which data may be needed. Palmer and Brainerd, op. cit., indicate the approach used in the "Six Cities" study for which the Bureau of the Census provided data in 1951. See particularly Appendix B, "Technical Notes" which reproduces the questionnaire used. Many other studies could be cited, among them: Charles A. Myers and George P. Shultz, The Dynamics of a Labor Market, (New York: Prentice-Hall, 1951); Lloyd G. Reynolds, The Structure of Labor Markets, (New York: Harper, 1951); Richard C. Wilcock and Irwin Sobel, Small City Job Markets, (Urbana: University of Illinois, Institute of Labor and Industrial Relations, 1958). The study by Donald J. Bogue, A Methodological Study of Migration and Labor Mobility in Michigan and Ohio in 1947, Scripps Foundation Studies in Population Distribution, No. 4, (Oxford: Miami University, 1952), uses special tabulations of data from the Bureau of Old Age and Survivors Insurance, as does Isadore Blumen, Marvin Kogan, and Philip J. McCarthy, The Industrial Mobility of Labor as a Probability Process, (Ithaca: New York School of Industrial and Labor Relations, 1955). Both contain descriptions of the nature and limitations of the mobility data thus obtained.

The general problems of obtaining data for labor market analysis are well illustrated by the variety of statistical sources from which data were obtained for the study by Gladys L. Palmer, Philadelphia Workers in a Changing Economy, Industrial Research Department, Wharton School of Finance and Commerce, (Philadelphia: University of Pennsylvania Press, 1956). The forces which work against mobility are the subject of studies by Gladys L. Palmer, Herbert S. Parnes, Richard C. Wilcock, Mary W. Herman, and Carol P. Brainerd, The Reluctant Job Changer: Studies in Work Attachments and Aspirations, (Philadelphia: University of Pennsylvania Press, 1962), this work, too, being marked by a great diversity of statistical sources.



## Unemployment Data

The two principal sources of unemployment statistics for small areas in the United States are the decennial censuses and the administration of the federal-state employment security program. The former source provides total unemployment figures for areas as small as census tracts, for 1940, 1950, and 1960. (The County Labor Force Reports have this information for their area units for 1960 only.)<sup>1</sup> These data, of course, only indicate persons "looking for work" during the reference week and are therefore subject to seasonal influences. Additional information on the nature of the unemployment problem, tabulated only for standard metropolitan statistical areas, and cities, with 250,000 or more population, includes totals of those looking for work who had not worked during the year. The extent of partial employment in standard metropolitan statistical areas is shown by indication of hours worked during the census week.<sup>2</sup> Apart from the measures of duration and extent, the only other characteristics to have appeared in published data are the major occupational group totals of the experienced unemployed. Totals for twelve groups were reported, separately by sex, for standard metropolitan statistical areas, urbanized areas, counties, and urban places of 10,000 or more population.<sup>3</sup> All of these data suffer from the defects common to other census labor force statistics.

Administrative statistics of the employment security programs, more useful than those of the decennial censuses because they are current, are available in a variety of forms from sources at federal, state, and local levels. The United States Department of Labor, Bureau of Employment Security, publishes weekly summaries of initial claims for unemployment compensation and total insured employment by states and monthly totals for most standard metropolitan statistical areas.<sup>4</sup> Additional data on unemployment, including area classifications, appear in other publications of the

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<sup>1</sup>Separate totals for non-whites and Puerto Ricans are provided for census tracts with 400 or more such persons in 1960; for non-whites in tracts with 250 or more in 1940 and 1950. Totals by sex are furnished for SMSA's, counties, and urban places of 10,000 or more population. Total rural and total farm unemployment appear by counties, by sex.

<sup>2</sup>Data in these last two categories were available in 1950 for SMSA's only. Non-white, sex, and age group totals were included in 1960. Also, in 1960, an indication of weeks worked in 1959 by these groups and year last worked was published for SMSA's. Indexes to census publications should be consulted if the reader wishes an indication of certain other detail available for the 1950 and 1960 censuses.

<sup>3</sup>Totals for non-whites appear for nine groups, for the same areas. Except for non-whites, data are available for 1940 and 1950 also. Two special tabulations of 1960 data have been made for census tracts in Philadelphia and Pittsburgh. See Income, Education and Unemployment in Neighborhoods, Philadelphia, Pennsylvania, and the similar title for Pittsburgh, U. S. Bureau of Labor Statistics, January 1963.

<sup>4</sup>U. S. Bureau of Employment Security, Unemployment Insurance Claims. The data for SMSA's is usually reported in the third week of the month.

Bureau,<sup>1</sup> and some smaller area detail are available in state and local employment security office publications. No regular data publication program exists, however, for counties or cities.<sup>2</sup>

Most of the series from the employment security program are of interest primarily as economic indicators, since they exclude unemployment not legally entitled to compensation. Pennsylvania's unemployment insurance laws do not cover railroad workers, agricultural labor, government employment, domestic service, service for non-profit organizations, or self employment. Hence, persons unemployed from these activities and new entrants or reentrants into the labor force are not reflected in the Bureau of Employment Security administrative statistics.

The contrast between the data from the two cited sources stems from the fact that the Bureau of the Census is a statistical agency as against the Bureaus of Employment Security which are not. Differences in unemployment compensation laws among states make difficult a uniform application of concepts and measurement techniques and create a problem of data comparability for regions extending across state lines. Comparisons even among areas of the same state have limitations because the nature of employment coverage can produce a differential effect: relatively higher figures may be reported for areas where most of the workers participate in covered employment than for areas with smaller proportions in such employment.

The number of insured unemployed are the basic component of estimates of total unemployment appearing regularly in the Labor Market Letters. To this component are added others representing the non-covered groups, those who have exhausted their benefits, those covered elsewhere such as federal and railroad employees, and entrants and reentrants to the labor force. Estimates of all these are added together and an area unemployment rate created by dividing the total by the estimated labor force.<sup>3</sup> No indication of the accuracy of these estimates is possible; but, they are the only source of economically meaningful unemployment totals for small areas.<sup>4</sup>

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<sup>1</sup>U. S. Bureau of Employment Security, The Labor Market and Employment Security, monthly; Area Labor Market Trends, bimonthly; Employment and Wages, annually. A discussion of the nature, sources, and limitations of employment security data appears in an appendix to the last-mentioned publication.

<sup>2</sup>In addition to information in the Pennsylvania Bureau of Employment Security publications cited earlier, (particularly the estimates of total unemployment in the local Labor Market Letters), other periodicals contain data on the insured unemployed. See: Pennsylvania Bureau of Employment Security, The Insured Unemployed-Who They Are; and occasional special supplements to this publication.

<sup>3</sup>Estimation procedures are detailed in U. S. Bureau of Employment Security, Estimating Unemployment, Employment Security Handbook Series, (Washington: March 1960).

<sup>4</sup>More extensive discussions of the nature of employment security data appear in National Bureau of Economic Research, The Measurement and Behavior of Unemployment, op. cit., in articles by Herbert S. Parnes, "Unemployment Data from the Employment Security Program," and Louis Levine, "Unemployment by Locality and Industry."

## Data for Forecasting and Other Purposes

Much of the necessary statement of data availability for forecasting has already appeared in discussions of the length and consistency of time series existing for various types of labor force data. Small area employment series other than those thus far considered simply are not extant in any consistent and usable form. As for the many collateral series of possible use in analytical forecasting, a detailed investigation lies beyond the resources available to this study. To some extent, the data sources have been observed in the earlier consideration of the techniques of the New York Metropolitan Region Study. Beyond these, one must be referred for published data to the many available indexes of government and other statistics.<sup>1</sup>

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<sup>1</sup>In addition to indexes already cited on p. 110, the periodic Catalogs of the Bureau of the Census should be mentioned. Another useful reference is Philip M. Hauser and William R. Leonard, eds., Government Statistics for Business Use, 2nd Edition, (New York: Wiley, 1956), which contains articles describing the nature of statistics from the various government agencies.

At the State level, the Department of Internal Affairs, Bureau of Statistics, 1962 Pennsylvania Statistical Abstract, provides reference to most available Pennsylvania data. Additional indexes may be available for local areas, such as that published by Delaware Valley Council, Guide to Planning Materials for the Delaware Valley, (Philadelphia: 1961).

As was mentioned earlier in the discussion of population data, projections of population and labor force have been made by various local agencies. A comprehensive program of county labor force projections has recently been completed at Temple University under a contract from the State Planning Board.



Both the Gordon Committee Report, as the report of the President's Committee to Appraise Employment and Unemployment Statistics is called, and that of the recent Congressional hearings on the subject<sup>1</sup> agree that the United States possesses an outstanding system for the provision of labor statistics, statistics as complete and accurate as those of any country in the contemporary world. They agree also, however, that there are significant deficiencies and omissions in the data which that system furnishes. As should now be evident, both praise and criticism are as relevant in the evaluation of small area data as in that of the national statistics. Indeed the criticisms in the studies of national data are more than merely relevant: they are greatly magnified when, as attention turns from national aggregate figures to their small area components, the advantage of mutually offsetting errors is lost.

It must be realized, of course, that any consideration of problems in the use of currently available small area data or assessment of adequacy in the present data system is based upon ideal criteria of detail, currency, accuracy, and comparability; criteria never yet achieved and often inherently impractical or inconsistent. Ideal detail conflicts with requirements for data currency, for the volume of information can become so large that efforts incident to its publication occupy so much time as to make it obsolescent. Ideal accuracy in measuring a concept as complex as employment is a goal only approached at the increasing expense of fine area and classification detail (since the smaller the estimates, the larger, usually, the relative error). And ideal comparability is entirely antithetical to necessary changes in concepts and procedures. An evaluation of a data system, therefore, cannot question simply detail, timeliness, accuracy or consistency; it must ask, rather, whether or not the data produced are adequate in those respects to the purposes for which they are intended.

Other constraints also apply to evaluations of economic data, among them limitations on the feasibility of proposed improvements arising from costs, availability of personnel and facilities, and needs for coordination among collecting agencies. But the overriding considerations are naturally the usefulness of the data and the benefits they confer upon planning and decision-making. Many questions may be raised concerning the suitability of data for the needs they are intended to serve; the types of detail in which information may be appropriate are almost boundless; and requisite accuracy is relative only to the kinds of analysis in use. It is presently impossible to develop with any precision a set of general specifications for the kinds of data needed, for the optimum frequency of their publication, or for the most desirable priority in their development. A fully adequate appraisal of employment and unemployment data and of systems for their collection must take place, not in a single study, but in a continuing program, preferably by a committee formed of both users and producers of statistical information and charged with the task of creating precise sets of specifications for the technical qualities required in it.

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<sup>1</sup>See note on p. 65, supra, for complete citations of these reports.

## Economic Base and Industry Studies

The principal purpose of an economic base study has been defined as the identification of the sources of employment, income, and output of an area. Having investigated the employment data needs for this purpose and the nature and limitations of the available industry series, it is necessary to consider the adequacy of these series as descriptions of economic activity.

The first problem to appear lies in the concept of employment itself. The employed person as the unit of measurement is by no stretch of the imagination a constant device for quantifying economic activity. Workers generally are not paid the same weekly wage, often do not work the same number of hours per week, and certainly have differing individual productivity. It has been observed that being employed may represent as little as one hour of economic production, and perhaps not even that if the worker is on vacation. Hence, the number of employed is not a conceptually ideal statistic for measuring the economic performance of either a community's industries or its labor force. This would hold true, of course, even if classification, accuracy, or other problems did not exist. Insistence at the present time on a conceptually more perfect measure would doubtless result in an operationally infeasible one because of costs and, perhaps, objections on the part of employers requested to furnish the data. For the immediate future, it would appear that these practical considerations dictate the continuance of the existing statistical definitions of employment, though they need not (and should not) preclude special inquiries financed by government into the extent of inadequacy of employment totals as indicators of economic activity.

It would be useful to know, for example, how part-time employment in a given industry, such as retail trade or construction, might lead to an overstatement of that industry's relative importance to the area economy as compared with that of other industries nearly all of whose employees work a forty-hour week. National data indicate that part-time employment has been increasing rapidly in the last few years, particularly in certain industries.<sup>1</sup> If more were known of industry trends in part-time employment, it would perhaps be possible to adjust the industry employment totals so that they might be stated as full-time equivalent figures in which a person employed, for example, only twenty hours a week would be counted as only one-half a worker.

On the basis of present information, it appears that some revision of the concept of employment is appropriate. The Gordon Committee recommends that "those working less than five hours per week be shown separately in the relevant published tabulations." For base study purposes, the additional distinction seems desirable between technically full-time and part-time employees, even though both may work considerably less than forty hours per week. A suitable standard minimum number of hours would be essential, however, to the definition of technically full-time employment; and, if it were administratively feasible at not too great a cost, employment totals by industry should be published for both full-time and part-time employment.

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<sup>1</sup>See, for illustration, the article "Persons Seeking Part-time Jobs," Employment and Earnings, Vol. 9, No. 12, (June 1963), pp. iii-v.



It is not unlikely that personal income or value added might be conceptually more suitable as a unit of measurement for the economic base. Studies to assess the relative merits of such other measures would also be useful since, even though the different units will generally move in the same direction, their relative changes may vary widely. The possible measurement units, other than employed persons, pose conceptual problems of their own which, however, must remain generally outside the scope of present consideration. These problems, and the administrative difficulties of obtaining data suitable for their investigation, make it probable that employment totals will remain the most useful measure for description and analysis of industrial activity in the local economy.

It has been seen that problems of coverage and consistency make it impossible for an economic base analyst to obtain reasonably current data from any one primary source. In the short run, the only feasible solution to this problem seems to lie in an expanded program of small area estimates of industry employment. It would be desirable to have them available by residence and by place of work, for, even if the county were the smallest unit for which such estimates were provided, there would still be sufficient commuting across most county lines to warrant estimates of both employment categories.<sup>1</sup>

County estimates by place of work would be most easily obtainable through the expansion of the existing data system based on employer reports. By no means adequate attention or resources have been devoted thus far to this system, considering the value of the information it is capable of producing. Additional investment is needed, both in personnel and facilities to produce these estimates and, more important, in basic research to improve their quality. In particular, information on sampling and other error is required, and efforts must be made to bring the quality of data on the non-manufacturing industries up to the level of that now achieved for manufacturing. The last is of major significance for Pennsylvania since non-manufacturing industries, especially those classified under services, are responsible for most of the State's current growth in employment.

A major phase of the basic research necessary to make current employment data more meaningful involves an investigation of the adequacy of the industrial classification system itself. It has already been observed that classification of employment by the primary product produced by an establishment may obscure economically significant production of secondary items. This is especially true of industries making intermediate items for use in the manufacture of their primary products. The formal base analysis attempts to handle this problem through allocation of employment by sectors of demand, including that of an industry's demand for its own products. However, this is not an entirely satisfactory solution, and the basic problem of inadequacy in the industry classification system remains. Again, research is needed to determine the magnitude of the problem and the industries particularly affected. It should give little difficulty to provide, along with tabulated data, some indication of the proportion of an industry's output representing secondary production, or even, for an industry (such as tool and die making) whose activity

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<sup>1</sup>Discussion of the many problems to be solved in organizing a system to provide employment estimates by residence will appear at several subsequent places in this report.



might take place largely as a secondary activity of other industries, an indication of the actual magnitude of this industry in the overall economy. This is in part a question of amount of necessary detail since primary and secondary activity may often fall into a single sufficiently broad classification; but such breadth may, by obscuring detail, submerge rapidly growing segments of industrial activity and hide the true nature of an area's economic growth.

The most difficult problems of small area data are those of accuracy and consistency. Accuracy would be less a problem were inaccuracy more consistent; that is, if errors were always in the same direction and of the same relative magnitude. Such, of course, is not the case; and the problem is complicated by the fact that almost nothing is published (or even known) about the magnitude of error or inconsistency in most current industry data. The difficulty may be illustrated by data from the 1960 Census for which error estimates are available. The small totals, based on information from the 25 per cent sample, are particularly treacherous, and should not be used without consideration of the potential range of error. One may consider, for example, the industry data for Adams County where during the census reference week, 238 persons were employed in the manufacturing category of textile mill products, and 302 (about 27 per cent more) were employed in repair services under the general service category. Using a standard statistical test, most statisticians would conclude that the difference between these two figures was explainable by chance variation inherent in probability sampling and that it might therefore be meaningless.<sup>1</sup> This instance helps to explain why statistical agencies are reluctant to publish data for very small areas or for finely detailed classifications.

The foregoing illustration pertains only to error arising from the fact that one household in four was included in the sample and tells nothing of error possibly entering the totals during other steps of data collection, processing, and publication. Of error in the estimates of industry employment based on the sample survey of employers, practically nothing is known, though they are probably safer to use than the small area census estimates, because the former are usually available only for the populous standard metropolitan statistical areas, and because the employer sample for many industries is very large.

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<sup>1</sup>Data are from U. S. Bureau of the Census, U. S. Census of Population: 1960. General Social and Economic Characteristics, Pennsylvania, Final Report PC(1)-40C, p. 494. A discussion of the measurement of sampling error in the estimates appears on p. xxx of this publication

In the standard terminology of statistics, the observed difference was found to be not significant at the ten per cent level. This means that if the actual employment totals in the two industry classifications were the same, differences as large or larger than the one observed would occur more than ten per cent of the time in many repetitions of the sampling and estimation procedure.

For larger totals, such as the overall employment figures of 19,993 for Adams County and 18,840 for Bradford, a difference of such magnitude would almost never (less than one per cent of the time) occur entirely as the result of sampling error. These illustrations may be generalized only to other comparisons of totals of the same magnitudes where the characteristics are relatively uncorrelated; otherwise recalculation of the error factor is necessary.

However, anyone who has studied basic statistics is aware of the pitfalls to be encountered even in using estimates based on very large samples if a significant portion of the group being sampled, such as the smaller firms, is inadequately represented. In the absence of careful research into the quality of the small area estimates one is forced to the conclusion that their reliability is doubtful for most classifications outside manufacturing. No condemnation is intended either of the analysts or of the agencies responsible for these estimates, but rather lamentation for the lack of resources provided for an important function and warning to anyone involved in economic base studies against naive acceptance of available data which may render their analyses specious and without value.

The occasional collection of accurate bench mark data is obligatory in any system for the estimation of labor force statistics, since the comparison of estimates with realities permits their suitable revision and so prevents the accumulation of successive errors. The bench mark data most often employed for this purpose derive from the Population Censuses and from the annual first-quarter totals of employment covered by unemployment compensation as published by the Bureau of Employment Security. But figures from these sources do not actually represent a true employment census; and furthermore, figures from the one source are by no means comparable with those from the other. The following table will illustrate the types of differences to be observed between them:<sup>1</sup>

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SELECTED INDUSTRY EMPLOYMENT TOTALS, ERIE COUNTY

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Industry	1960 Census	BES, 1st Qtr., 1960
Total Employment	86,892	68,876
Manufacturing	35,265	36,068
Construction	3,420	1,820
Trade	15,231	13,685
Finance, Ins., Real Estate	2,741	2,203
Industry not reported	1,606	57

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Among the many reasons for the obvious incomparability between these two sets of figures are the problem of inter-county commuting by workers, multiple jobholding, sampling errors, differences in classification systems, incomplete coverage in the collection of data by the Bureau of Employment Security, and

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<sup>1</sup>Source: Last cited Census volume, p. 381; and Bureau of Employment Security, Employment and Wages, Statistical Information Bulletin No. 142, (Harrisburg: 1961).

the fact that that agency's count was made approximately three weeks earlier than the census reference week. One may ask why the wide disparity appears, for instance, in construction employment. Is it because not all construction workers are covered by unemployment compensation? Or because some construction workers are classified by the Bureau of Employment Security under other industrial categories? Or because construction activity may rise sharply with the improved weather of late March and early April? Or because construction workers commute between counties from residence to place of work? Or because of still other reasons?<sup>1</sup> It might be expected that greater detail would clear the air, but it only serves to confuse the more. For example, it is observed that the census reported fewer persons employed in manufacturing than did the Bureau of Employment Security. This inconsistency with the Bureau's apparent tendency toward under-counting is magnified by its reversal in the figures for the manufacturing sub-category of food and kindred products where the census reported 2201 employed, or more than the 1981 reported by the other agency. Such difficulties emphasize the prevailing ignorance of the nature and magnitude of possible error. It is all too apparent that the analyst can not treat such data as accurate indicators of an area's industrial activity. And to use data of such doubtful value as bench marks for comparison with labor force estimates would seem to verge upon the absurd, were it not for the long experience and highly developed skill of the analysts who employ them.

One of the rare studies of comparability of industrial employment series<sup>2</sup> indicates still other problems. Not only seasonal but also cyclical movements may influence data provided for a single reference week of an isolated year. Attempts to determine industrial trends by comparing 1940, 1950, and 1960 census totals may be thwarted or misled by no less simple a fact than the continuing effects of the depression and the still high level of unemployment in 1940 (overall fourteen per cent of the labor force, with, of course, some industries more depressed than others). Hence, unduly low 1940 figures could easily lead to overstatements of growth trends for the twenty year period.

As noted with extensive detail in the Gordon Committee Report,<sup>3</sup> employment data for agriculture are particularly deficient. Adequate local estimates are non-existent; and current state and national estimates are unsatisfactory owing to conceptual problems of part-time and multiple jobholders, sampling error, lack of information on seasonal fluctuations, and so on. Major investigation and revision of methods are demanded here, perhaps

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<sup>1</sup>It appears that a major cause of the 1960 census - BES discrepancy in construction employment was the classification of highway construction workers as government employees by the Bureau of Employment Security while the 1960 Census listed them under construction. For an example of the analytical difficulties produced by the discrepancy, see Pennsylvania's Personal Income, 1929-1960, Report No. I-1, Department of Internal Affairs, Commonwealth of Pennsylvania, 1963, p. 4.

<sup>2</sup>John P. Henderson, "Comparability of Estimates of the Industrial Distributions of Employment," The Review of Economics and Statistics, Vol. XLIII (February 1961), pp. 36-43.

<sup>3</sup>Gordon Committee Report, op. cit., pp. 21-22, 96-102, 123-129.



beginning at the federal program level.<sup>1</sup>

Despite the general negative tone of findings on currently available industry data for small areas, it is hardly to be inferred that the existing series are useless. Base studies to which they are essential continue as elements of major importance to regional and local economic analysis. What must be inferred is rather that, for the present, analysis of the adequacy of data to be employed must occur before proceeding with the base study itself, and for the future, considerably more resources must be devoted to the system of small area data if the potential benefits of base analysis are to be fully realized. Until more accurate data are available, the highly analytical methods of industry analysis, such as the formal base study with its finely detailed cross-classifications of employment by industry and source of demand, must be reserved for the larger regions where the data must still be critically regarded and used with appropriate caution.

### Employment and Unemployment Analyses

Practical problems in the application of employment data are, of course, hardly limited to their function in measuring economic activity; one must also consider the question of their uses in studying the phenomena of employment and unemployment themselves. Unfortunately, present day labor force concepts derive from the depression period, before the potential uses and requirements for such data were fully realized. In the censuses before 1940, employment and unemployment as such were really not measured at all, but "gainful workers" of ten years of age and over who, upon questioning, could specify their occupations were reported instead, no matter whether they were employed full-time, part-time, intermittently, or (at the time) not at all. Anyone seeking work for the first time and therefore as yet unable to name an occupation went unrecorded. Such a system could give only inadequate indication, if any, of the extent of employment and unemployment, since it was geared only to the measurement of the supply of skills in the population. This is one of the major reasons for the incomparability of census data before and after 1940. In that year, with the purpose of providing detailed information on the nature and extent of unemployment (then still a critical problem), new concepts of labor force, employment, and unemployment were carefully defined and new emphasis laid upon the individual's immediate activity and the time reference of a single week. As is clear from the general consistency of census data since 1940, the approach has undergone no basic change in nature. However, considerable quantities of detail have been added to it relative to characteristics of individuals in the labor force, and many challenges, documented in voluminous literature,<sup>1</sup> have been offered to the adequacy of such data for purposes of economic analysis.

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<sup>1</sup>Other problems of industry employment could be mentioned, such as the unavailability of current information on the ten to fifteen per cent of Pennsylvania's labor force, discussed in the preceding section, who are self-employed. Comments on some of these problems will appear in subsequent discussions.

<sup>2</sup>See Long, op. cit.; Bancroft, op. cit.; Jaffe and Stewart, op. cit.; National Bureau of Economic Research, The Measurement and Behavior of Unemployment, op. cit.; among others.

The design of and concern for labor force measurement concepts, however, have usually been oriented toward analysis of the national, rather than the regional or local, economies. Their appropriateness for small area uses becomes more and more open to question as the needs for small area employment information grow. But arguments for consistency in measurement concepts among areas are powerful ones; and the regional economic analyst would be well-advised to find ways to use the existing concepts wherever possible rather than sacrifice the advantages of consistent data. Furthermore, needs for consistency among areas place strict limitations upon the kinds of innovations which state or local agencies can or should initiate in data collection.<sup>1</sup> In general the present study's findings as to concepts and definitions agree with those of the Gordon Committee Report: that "the present definition of the labor force should be retained," that "present concepts used in the household survey can be sharpened," and that "more data are needed on persons not in the labor force as presently defined."<sup>2</sup>

Probably the most serious need in employment analyses is for better occupational data, both current statistics and information on occupational trends. The Bureau of Labor Statistics and the Bureau of Employment Security are presently engaged in the planning and testing of programs to provide detailed series on occupations. But it is likely that reliance will be placed for these data upon the employer reporting system even though this system as presently constituted will not provide data of the breadth and quality needed. Too many occupations of growing importance to the economy fall in such categories as construction, the self-employed, or others where employer reporting is either inadequate or impossible. On the other hand, for other types of highly technical occupations, household surveys would not be likely to make the distinctions necessary for accurate classifications. Apart from skill characteristics and technical requirements of occupations, however, one needs much more knowledge than is presently available about the economics of change in the occupational structure of industry, particularly in fast-growing service industries and in manufacturing industries where technological change has been rapid. And not the least of the difficulties of employer reporting of occupational information is the fact that employer records may not provide adequate indication of occupation. In the absence of any simple solution to the problem of developing adequate statistics in this area, several separate programs entailing considerable research and innovation will probably be necessary as the Gordon Committee suggests.

The preceding comments on the inadequacy of census industry employment totals for small areas are also generally applicable in the consideration of occupational data from censuses. Small totals are not to be trusted because of sampling error; seasonality is at times a distorting influence; interviewers

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<sup>1</sup>For this reason, lengthy discussion of who ought or ought not be counted as employed should not be developed here. The potential danger is clear that if a state attempts the collection of data not now provided at the national level, a subsequent national program for general provision of the items may use inconsistent definitions or procedures. Close and effective liaison among statistical agencies at all levels of government is only a partial answer to this problem.

<sup>2</sup>Gordon Committee Report, *op. cit.*, pp. 13-14. See also pp. 14-29 and 42-72 for amplification of these points.



find classification of occupations troublesome; and other such difficulties arise. When occupations have been growing rapidly, determination of the proper growth trend may be especially difficult because of the uncertainty of the effect of the depression upon the occupational totals of 1940. Research might be appropriate to determine better estimates of the actual totals of that time and the values which would then have been indicated had not the business cycle or seasonal influence produced distortions in the total numbers of individuals employed in given occupational categories. It is not infrequently the case that the most meaningful figure may be not the measurement of the actual circumstance but rather the estimate which tells what might have happened if some non-recurring factor had not intervened to obscure the effects of the principal long-term economic influences. Even were correction factors developed to remove the effect of a depression or other shorter-term influences in national or state series, there is no reason to believe, in the absence of supporting statistical evidence, that such factors would be applicable to smaller regions within a state.

Another critical need which the Gordon Committee report has singled out for special attention is that of job vacancy data.<sup>1</sup> Experience in collecting data on current and future job vacancies has been so uniformly frustrating that labor statisticians shudder at the thought of attempting such a program.<sup>2</sup> Yet there is little doubt of the need for present and prospective job vacancy data. Certainly better information on the availability (or non-availability) of jobs would permit more efficient functioning of the labor markets. Experimentation with concepts, definitions, and procedures for obtaining such information will doubtless eventually be undertaken both by federal agencies now engaged in collecting employment statistics and by state and local agencies whose contribution may prove of key importance in ultimately finding jobs for the currently unemployed, including the increasing numbers of persons either displaced by technological change or newly entering the labor force.

Among the principal difficulties in obtaining realistic measures for forecasts of job vacancies has been the tendency of employers to inflate both present vacancies and future needs. If this problem can not be overcome, then the alternative method of analytical forecasts of employment by occupations may be necessary. Simple projections of occupational trends, provided for years by state employment service offices and other agencies, unfortunately offer little to the solution of current or future problems of employment and unemployment because they are based on inadequate data and naive forecasting models.

Still another deficiency in the present system of information on the functioning of labor markets involves the concept of net rather than the equally important gross changes in employment. This problem is one of the many discussed under the heading of labor mobility, an area in which current ignorance is probably the most profound. Even when monthly totals are

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<sup>1</sup>Gordon Committee Report, *op. cit.*, pp. 199-202, 271-281.

<sup>2</sup>Canada has conducted employment forecast surveys, based on employee anticipations, since 1946, with thoroughly discouraging results. See Douglas G. Hartle, The Employment Forecast Survey, Canadian Studies in Economics, No. 14, (Toronto: University of Toronto Press, 1962).



available for categories of employment, only indication of net change is given; none can be found of the number of persons who, included in the figures for one month, are absent from those for the next (or vice versa). The same problem arises for unemployment and labor force totals, as individuals shift back and forth among categories and move in or out of the labor force. Here, again, to fill the need for data on the nature of gross changes in employment totals, the household survey would appear to offer the only reasonable source.<sup>1</sup>

The lack of knowledge about labor mobility is nearly equalled by that on the extent, nature, and economic impact of unemployment. Clearly, the statistics on individuals drawing unemployment compensation, valuable as they are, provide insufficient basis for the formulation of plans and policies to eliminate long-term unemployment or to deal with unemployment anticipated in the future. Present measurement concepts and procedures have been tailored to the economic philosophy that monetary and fiscal action by governments can cure unemployment whenever measurement indicates its presence at an unjustifiably high level. However, recent experience has pointed out that constraints such as the balance of international payments may come to impose severe limitations on monetary and fiscal policies for dealing with unemployment, and that increasing direct action to cure the malfunctioning of labor markets will be mandatory. Presently anticipated data requirements for such purposes again carry implications in favor of the creation of a system of regional household sample surveys.

If, in such possible regional surveys or in the existing national monthly household survey and the population censuses, the current definition of unemployment is to be maintained, more information will be required on borderline cases between being "unemployed" and being "not in the labor force." Innovation of this kind properly belongs in the sphere of federal government activity, for the sake of uniformity of concept, even though small area data are as necessary as national. Pilot studies should be conducted to test the appropriateness of definitions and procedures for new data programs arising in response to recommendations made by the Gordon Committee Report.<sup>2</sup> Some are already underway with the collaboration of Pennsylvania agencies; and the more extensive that Pennsylvania collaboration can become in providing personnel and facilities as well as financing to this underlying research and experimentation, the more significant will be the State's gain in information on aspects of its industry and labor force as yet unreported and even unplanned for.

It has already been observed that there apparently is no precise check for the accuracy of current totals and rates of unemployment as roughly estimated by agencies of the Bureau of Employment Security. Yet the level of unemployment is a major factor in determining a depressed area's eligibility for assistance under federal programs such as the Area Redevelopment Act; and these estimates, the only ones available, must serve as the criteria to judge such eligibility. Attempts have been made from time to time to test their consistency with other estimates from censuses or the Current Popula-

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<sup>1</sup>See Gordon Committee Report, op. cit., p. 16. Also, Robert B. Pearl, "Gross Changes in the Labor Force: A Problem in Statistical Measurement," Employment and Earnings, Vol. 9, No. 10, (April 1963), pp. iv-x.

<sup>2</sup>Gordon Committee Report, op. cit., pp. 44-72, and passim.

tion Survey.<sup>1</sup> This, of course, hardly constitutes a real test of accuracy; but an indication of similar magnitudes, if found, could at least indicate that the same phenomenon had been estimated in each case. Unfortunately, even the censuses and the Current Population Survey give divergent results: in 1950, the census total for unemployment in the United States was approximately twenty per cent below the corresponding estimate from the Current Population Survey; and in 1940, the difference was in the same direction though not as great. The national Bureau of Employment Security estimates in general have tended to agree with those of the Current Population Survey, and all evidence points to the Survey data as being of greater accuracy than those of the censuses. This agreement, however, may arise from offsetting errors, since the employment security estimates for specific small areas in 1950 ranged from five to forty per cent above the Census count indicating either variability in the extent of undercounting by the Census, or error in the Bureau of Employment Security estimates, or both. In 1960, the Bureau's estimate of the national total stood about as much above the Current Population Survey figure as the Census estimate stood below it. Ullman<sup>2</sup> has calculated measures of variation between 1960 Census and Bureau of Employment Security estimates of number of unemployed for standard metropolitan statistical areas, among them the twelve in Pennsylvania. He has found that, although in every one of those twelve cases the Pennsylvania Bureau of Employment Security figure exceeded that of the census, four of the differences were by less than ten per cent, and two (for Altoona and Scranton) were by more than forty. Such variation is ample proof that greater knowledge of estimating error is essential.

The layman, reading for the first time a textbook on labor economics, will doubtless be impressed by the extent of the theory available to explain labor phenomena. But he will not realize how little of this theory has been tested by the sometimes cruel (to the theorist) device of verification by statistical investigation. Quantitative research in labor economics is still in its infancy, even as compared with that in other areas of economics. Accordingly, the supply of misinformation about the workings of labor supply and demand appears large. Many current hypotheses on labor market behavior have been the result of thirty years of armchair theorizing to explain the unusual economic events of the times. Some that have even been taught as principles to students of economics appear in the new light of recent labor market research as far less tenable than they were once generally believed. For example, one such principle has stated that the rapid growth of industry pension plans in recent years has raised an institutional impediment to the mobility of labor. Certainly the idea seems plausible enough; but a recent study provides strong evidence that pensions are a minimal factor in workers' reluctance to move to other jobs.<sup>3</sup> Similar instances could be cited.<sup>4</sup> But

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<sup>1</sup>See, among other references, the articles by Herbert S. Parnes and Louis Levine in National Bureau of Economic Research, The Measurement and Behavior of Unemployment, op. cit.; and Joseph C. Ullman, "How Accurate are Estimates of State and Local Unemployment?" Industrial and Labor Relations Review, Vol. 16, No. 3, (April 1963), pp. 434-452.

<sup>2</sup>Ullman, op. cit., pp. 448. Perfect comparability, of course, could not exist between the estimates because of reference week and other minor difficulties.

<sup>3</sup>Herbert S. Parnes, "Workers Attitudes to Job Changing: The Effect of Private Pension Plans," in Palmer, et al., The Reluctant Job Changer, op. cit., pp. 45-80.



interest here is less in the inadequacy of quantitative research in labor economics than in an evaluation of data available for research purposes. Even so, the two are related in several ways. A principal reason for the slow developments in quantitative testing of economic hypotheses is, of course, the unavailability of data. And, until economic theories are further refined, specification of data requirements is hampered. One is confronted with a situation where the evaluation of the adequacy of the data system depends on more research in the economics of labor (among other things) which itself depends on more and better data. Such a problem is hardly uncommon or unfamiliar to anyone acquainted with the history of science.

### Other Uses of Labor Statistics

The many varieties of industry and labor force analyses reflect the principal uses of detailed labor statistics. However, evaluation of the adequacy of data must not neglect entirely their secondary uses in which employment and unemployment figures, the only ones available for the purpose, provide indirect information on additional aspects of business, government, or individual activity. Among such applications, as mentioned before, are uses as indicators of cyclical movements in the general level of economic activity and as substitutes for more directly relevant data in transportation, land use, and other studies for planning. These applications, because of their variety and lack of uniform, systematic methodology, do not seem to constitute a subject appropriate for study here in depth. Nor do any special data programs appear reasonable to serve them for the immediate future, especially in view of the more pressing need for improvements elsewhere. Actually, these secondary requirements for labor force data should to a considerable extent be satisfied by the improvements suggested to meet the primary needs.

Better detail on employment, for instance, would have considerably aided attempts to obtain an estimate of potential revenue from a proposed tax measure in a certain Pennsylvania city, one of the many other than Philadelphia located in the Philadelphia Standard Metropolitan Statistical Area.<sup>1</sup>

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{Footnote continued}

<sup>4</sup>Another excellent example is the study by Bunting which questions whether lower wages relative to those under more competitive conditions will be paid in labor markets where a few employers hire a large proportion of an area's work force. See Robert L. Bunting, Employer Concentration in Local Labor Markets, (Chapel Hill: University of North Carolina Press, 1962). The work is particularly excellent for its discussion of techniques and data problems.

Other examples of labor market research for purposes of testing hypotheses appear in National Bureau of Economic Research, Aspects of Labor Economics (Princeton: Princeton University Press, 1962); and Herbert G. Heneman, Jr. et al., eds., Employment Relations Research, Industrial Relations Research Association Publication No. 23, (New York: Harper, 1960).

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<sup>1</sup>The analysis to be described and the estimate were provided by the Government Consulting Service of the Fels Institute of Local and State Government, University of Pennsylvania.



Its administrators were considering the emulation of Philadelphia by imposing a wage tax on the earnings of its residents and non-residents who worked within its limits, excluding, of course, all who were employed in and taxed by the city of Philadelphia (as exempted by existing laws). However, no earnings figures on taxable individuals could be obtained, and an attempt was therefore made to determine employment totals by industry classification of the taxable workers and to transform them to income figures. This was done by multiplying total employment by an estimated average wage based, principally, on the first quarter bench mark data for county wage averages, published by the Bureau of Employment Security for covered employment.

This effort occurred in 1960, when the only available source of information on the employed residents was the 1950 Population Census with its out-dated figures which had to be projected to 1960 as well as could be with the limited information available. The 1958 Censuses of Business data helped somewhat, and the Bureau of Employment Security was able to suggest county (not city) ratios of industry employment to total employment in some categories. But these too were only rough approximations. Even locally available data on sewer rentals were among the figures brought into use in the effort to establish some of the employment estimates. Direct information was unavailable on place of work as opposed to residence, but certain relationships could be inferred from an area traffic origin and destination survey made as long before as 1951. No data existed, either, on the number of residents of the city working in Philadelphia; and informed judgments were pooled to arrive at a percentage for this factor.

The list of assumptions or guesses which had to be made to convert information into figures representative of actually relevant magnitudes could be extended much further. The revenue estimate eventually, and very nearly miraculously, produced was probably far better than the circumstances would lead one at first to suspect. Yet greater accuracy, to say nothing of ease, would certainly have been obtained had the types of current data already discussed as appropriate to base studies and labor market analyses been available to the hard put analysts.

## Recommendations

### Preliminary Considerations

Numerous references have been made to areas where specific improvements or research are essential to increase the effectiveness of the labor force information system, though perhaps not enough has been mentioned regarding activity now underway for the purpose. It is obvious that federal, state, and local governments, and many other institutions and agencies including Pennsylvania's four major universities have in process projects with potential for improved State and local statistics. The impetus for so much new activity in Pennsylvania springs, of course, from the lagging rate of economic growth and the chronic unemployment problem of many areas. While advantages are offered by the diversity of activities and approaches in the many attempts to supply better information regarding State and local economies, there is doubtless waste of resources where data could be collected or projections developed more efficiently by a centralized agency. Moreover, the inefficiency of many separate and often uncoordinated programs becomes more critical when independently developed concepts or procedures of measurement provide only single-purpose data instead of multiple-purpose data that might have been obtained by a single program for possibly less expenditure of resources.

Although it is obvious that a greater degree of coordination is necessary, the form, extent, and means of effectuating such coordination is not so clear. As in the case of population data, discussed in the previous section, the experience of the federal government with the problem is a useful model; but, that solution as applicable to labor statistics has been far from perfect. Still, the pattern of interrelationships between the major data producing agencies in the Bureaus of the Census, Employment Security, and Labor Statistics seems worthy of emulation by the State government, partly because it has proved workable, and partly because State agencies on the one hand would find liaison much easier with their federal counterparts on the other, if the two organizational structures and spheres of responsibility were similar.

Again, as in the case of population data, a State research unit specializing in labor statistics and quantitative economic research is highly desirable. To be sure, specification of location, organization, and functions of such a unit require further study since relationships would have to be clearly detailed between it and the various State agencies, especially those of the Departments of Commerce, Labor and Industry, and Internal Affairs. Problems of employment, unemployment, and economic development are so thoroughly interrelated that a joint program of economic information and research may be required with contributions from each of these Departments. Once again the example on the federal level of collaboration among the various Departments, the Bureau of the Budget, and such groups as the President's Council of Economic Advisors and the Joint Economic Committee of Congress is one deserving of study for its demonstration of operational feasibility.

Needed research in labor statistics at the State level falls into two principal categories. First, apart from the actual data collection system comprised of such recurring field activity as censuses and sample surveys, there is the data-producing research that assesses the quality of information and revises it when appropriate for comparability, determines analytical measures like seasonal indexes, and provides meaningful historical series

and the many types of projections heretofore discussed. Second, there is the research that develops measurement concepts and procedures and relevant theory. It involves a continuing program of inquiry into data needs and uses and measures for the provision of more useful data. Perhaps it may even attempt innovations in the techniques of regional economic research; but how far such developments should be pursued depends in large part upon the nature of other activities established in the State government for the diagnosis and treatment of the ailments currently afflicting the Pennsylvania economy.

A few suggestions have already been made with reference to the division of responsibility appropriate in research activity and data collection among federal, State, local, and private agencies. To some extent, the degree of generality of the information to be produced should be a determinant of the location of ultimate responsibility. And as indicated earlier, the direction of the federal government should be followed as far as possible in the establishment of measurement concepts. Collaboration rather than leadership should continue to be the principal function of the State agencies in this area, particularly in provision of recommendations on needs and testing of proposed definitions and procedures. Pennsylvania agencies have already played a major part in such activities; but there is still much more that they can offer to the development of a better national program of labor statistics. Presumably, the financing of such a program would stem largely from federal sources, although some State support would always be necessary, especially to provide administrative personnel. In many instances, of course, activity necessary at the State level, such as developing projections of state and county series, studying conditions in state industries or local labor markets, measuring seasonal fluctuations in regional series, and so on, would make little, if any, contribution to federal data programs. These are clearly cases where the State must generally bear the whole burden of financial support, unless certain activities have some particular regional interest sufficient to enlist local support.

Liaison and collaboration, both formal and informal, among the producers and consumers of data is desirable and should be encouraged. Informal associations have long been maintained among individuals on the federal, state, and local levels, but often on a basis so highly personal that they fail to provide the continuity of liaison requisite to responsibilities shared as widely as those in the economic data systems. It seems evident, therefore, that more formally organized liaison would produce improved statistics and that some means is necessary to institutionalize such cooperation.

An essential part, it need hardly be pointed out, of any program of labor statistics is the assessment of costs and benefits of proposed improvements. Perhaps the most critically needed study of this kind at present is one which would investigate prospects for the conduct of regional sample surveys of households modeled after the national Current Population Survey.<sup>1</sup> The cost of duplicating this probability sample of 35,000 households for a region is perhaps exorbitant. Yet, however much the potential cost must be to produce critically needed information with reasonable accuracy, it should be weighed against the potential cost of blunders planned through ignorance. The difficulties observed in using inadequate data from the censuses and other types of surveys

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<sup>1</sup>See discussion, supra, pp. 74, 84 (note), 114.



demonstrate only too clearly the need for a statistically sound and professionally administered program conducted with the support of resources adequate to produce data worthy of publication. It should not be difficult to obtain realistic cost estimates for such a program, particularly if the Census Bureau's experience with probability sampling in the Philadelphia area be drawn upon. Monthly surveys might prove impossible for financial reasons; if so, quarterly ones would still produce useful information on seasonal and other short term movements; and even an annual survey, skillfully enough conducted, would go far toward remedying certain of the major data deficiencies heretofore described. Alternative cost estimates are desirable, not only for programs with varying frequency of survey occurrence but also for variations in the quantity and quality of data to be secured. Evaluation should also be attempted of the extent of benefits from increased information that would accrue to the State's regions, as well as to the State itself, since joint State and local financing may be the only feasible way to support such a program. Finally, it should be made very clear that no adequate substitute yet exists for a program of skillfully conducted household surveys, expensive though they may be. They alone are capable of producing consistent information on all segments of the population. Without them, the system of labor force data is makeshift at best.

Significant improvements in the data publication programs of State agencies have been made in recent years. But possible advantages from their data systems are doubtless still lost either through unawareness of the availability of the data on the part of many who need them or through unfamiliarity with their analytical uses on the part of many others. To correct this situation, programs would be warranted for expanded publication of county industry and labor force reports, labor market letters, and broader compilations of basic data. Moreover, such releases should contain ample description of the nature and limitations of particular data and considered suggestions for their use. It seems reasonable to presume that relatively modest expenditures on publicity to draw attention to the research potential of existing data and to promote their increased use in research would provide a greater return on investment in data systems than at present.

Thus far, many implicit recommendations for a State data program have probably been noticed. Most have been purposely expressed in general terms or with qualifications because of the uncertainties in the future of the federal government's statistical program. Indeed, the system of labor force information is at present in a state of flux greater than at any time since the depression. The variety and quantity of new demands upon the system, the many recommendations of the Congressional and Gordon Committee Reports, and the proposals for still other changes (such as that for a mid-decade census), guarantee numerous developments within the next few years that may condemn as obsolescent or inconsistent many of the possible innovations at state and local levels. Yet the pressing needs for more information of higher quality would appear to justify immediate action in a number of specific directions:

## Recommendations

### First Priority Items

It is recommended:

1. That a program be initiated to provide annual county estimates of

total employment by occupation and by industry. These should be provided by residence and by place of work, and eventually, for sex and age groups, and for non-whites where major differences exist between patterns of activity of whites and non-whites.

2. That a program be initiated to explore the causes and economic impact of unemployment in both counties and labor market areas. Where presently constituted labor market areas, as, for instance, that of Philadelphia, show wide variation in unemployment within sub-regions of the area; then there must also be investigation of these sub-regions. Information on the characteristics of the unemployed should be obtained separately for those entering unemployed status by lay-off and for new entrants or reentrants to the labor force.

3. That systems be instituted for more adequate bench mark data and for improved data quality in general.

4. That present programs of analysis and adjustment of series for comparability be extended to include studies of cyclical and seasonal influences, and that increased use and publication of seasonally adjusted series be made. Where data are produced annually as of a specific short reference period, information should be developed to permit their adjustment to annual average levels.

5. That a projections unit be organized to provide current estimates for types of data not normally available, particularly, where appropriate, for areas so small as not to be included in the regular data program. Other activities of this unit should include long term projections, special labor force studies, and programs to evaluate the adequacy of projection methods and to revise both projections and methods in the light of experience and new information.

6. That action be taken to strengthen existing State data programs. In particular, the sampling procedures in the Bureau of Employment Security employer survey should be improved through increased representation for industries inadequately covered in the present sample. Studies should also be conducted of other means for improving the adequacy of the sampling and estimation procedures of this system, and of the feasibility of extending the coverage of the Department of Internal Affairs annual census to other types of industry, trade and services, particularly.

### Second Priority Items

It is recommended:

1. That a program of data collection and research on labor mobility be initiated. Only practical considerations place this in second rather than first priority since it is particularly dependent upon the availability of trained researchers and an operating sample survey program. In the meantime, encouragement should be given to university research on labor mobility.

2. That studies of the need for changes in concepts be undertaken, to include investigation of the need for distinctions between full-time and part-time employment, the nature and extent of multiple job holding, gross versus net change in employment and unemployment, and similar problems of identification

of the magnitudes of employment and unemployment.

3. That State initiative be taken to collaborate with the federal government in the development of new programs such as that proposed for job vacancies.

4. That studies be conducted to further the contributions of the State system of labor information to programs in regional economic research such as those currently underway in the Pittsburgh and Philadelphia regions. Personnel and facilities should be available at the State level to permit more active collaboration in these programs and greater interchange of information.

5. That appropriate action be taken to implement the findings of the above studies.

### Third Priority Items

It is recommended:

1. That provision be made for more detailed analysis of current and potential labor supply. Included should be the procurement of additional information on persons not in the labor force but constituting a potential source of labor supply and the study of long- and short-run changes in labor supply and their causes.

2. That research on the demand for labor extend to studies of primary and secondary industry employment, allocation of employment by sectors of demand, the occupational structure of industry, and other problems on the borderline between labor force and industrial research, and to the consequent collection of data as required. The prospects of interindustry and other models for regional economic analysis, and the possible data systems for them, are among other topics suitable for an extended program of research in industry economics.

3. That, as resources permit and the value of such data warrants, existing and newly developed programs of labor statistics extend their activities to provide increasingly finer geographic detail.



### 3. PERSONAL INCOME STATISTICS

#### Requirements for Data

In the preceding two sections, the importance and use of population, employment and labor force information for regional and local planning and development purposes was indicated. This section concerns itself with income data, another important index of the varied aspects of regional economic development. Income in its numerous variants represents one of the most widely used indicators of overall economic activity. For example, various income measures, such as real income per capita, real income per member of the labor force and real income per manhour have been suggested and used as the most pertinent single indexes for comparing the relative economic growth of different geographical regions. Income figures are probably the most suitable single index of regional economic well-being or welfare. Planning and development agencies and State and municipal officials are keenly interested in income measures as comprehensive summary indicators of fiscal capacity and local or regional purchasing power. Regional and local income data are needed for many economic planning and control activities in the establishment of broad resources policies and programs, in the analysis of employment and investment opportunities, in the specification of local economic problems and in the analysis and appraisal of the economic status and vitality of the populations in the planning areas.

At the national level, national income statistics have been used as the basis for establishing a broad comprehensive economic accounting system which provides an organized framework for the statistical description of the economy, for the measurement of economic changes and often represents the analytical structure within which fiscal and monetary policy matters are debated, discussed and formulated. It would be difficult to imagine economic planning activities today at the national level in the absence of the conceptual framework and statistical data provided by the national income system of accounts.

It is not surprising, therefore, that there has been a great deal of interest in and thought given to the possibility of developing sub-national regional systems of accounts analogous to the national framework. There is little question that economic planning and development activities in metropolitan areas, for example, could be much more intelligently carried out, that understanding of metropolitan economic problems would be considerably enhanced, that more meaningful economic studies could be made if an operational system of metropolitan regional income accounts were in existence. Illustrative of the interest in establishing such a system of accounts for regional analysis are activities sponsored by Resources for the Future, Inc. and the Committee on Regional Accounts.<sup>1</sup> Also, it may be noted that in the

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<sup>1</sup>See for example Design of Regional Accounts, edited by Werner Hochwald, Johns Hopkins Press, Baltimore, 1961 and the papers by H. S. Perloff, W. Z. Hirsch and H. Cohen under the subject heading, "Systems of Economic Accounts and Analysis for Urban Regions," in the American Economic Review, Vol. LII, No. 2, May, 1962, pp. 356-385.

Penjerdel-sponsored study of the feasibility of an area data service for the Philadelphia metropolitan region, one of the organizational structures contemplated was that of regional economic accounts. The National Planning Association has carried out an extensive set of studies in local economic accounting,<sup>1</sup> a number of States have begun to derive measures of State economic activities along the lines of the national income and product accounts and recently in Pennsylvania the State Planning Board has been studying the feasibility of the construction of a regional system of accounts for the Commonwealth.

Furthermore, it may be pointed out that the "economic base" model so often used in local and regional planning studies leads quite logically to the conceptual development of systems of economic accounts. In the earlier study of this series, it was indicated that the attempts of one economist, Charles L. Leven, to adapt the economic base concept to the study of an area's total economic activity led to his construction of a set of double-entry income and product accounts for a metropolitan area along the lines of the national income accounting system. Among the advantages cited for this approach were its comprehensiveness in giving consideration to all income sources and imports as well, the description of the community's activities in terms of its ultimate economic goals, namely, consumption and income and the avoidance of the tendency present in base analysis of treating service and trade activities as being unimportant.

However, although one may grant the great desirability and advantages of regional and local counterparts of the national income accounting system for economic planning and development activities in these areas, formidable obstacles stand in the way of a broad scale implementation of these regional systems. Charles F. Schwartz has pointed to the lack of feasibility of estimating some of the components of the national economic accounts on a smaller geographic basis and summarizes some of the difficulties as follows:

- "(1) presently available data would be inadequate for the purpose of comprehensively extending the national accounts to an area basis,
- (2) the collection of additional requisite statistics would, in important instances, be difficult and costly, and
- (3) there does not appear in any event an impelling, demonstrated analytical need to duplicate for subareas the accounting system which has been found appropriate for the nation as a whole."<sup>2</sup>

Mr. Schwartz concludes his arguments by making a case for the expansion and improvement of "personal income" measures for subnational areas.

It is significant to note also that in the Pittsburgh Regional Planning Association's three-year study of the Pittsburgh region, an analytical framework was constructed which by-passed the utilization of a complete set of regional accounts. Its basic projections were of population, employment,

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<sup>1</sup>See Local Impact of Foreign Trade, A Study in Methods of Local Economic Accounting, National Planning Association, 1960.

<sup>2</sup>Hochwald, W., ed., Design of Regional Accounts, "Comment," by Charles F. Schwartz, Johns Hopkins Press, Baltimore, 1961, pp. 145-147.



and personal income. Fractional portions of standard accounting tables were developed but no comprehensive cross-tabulations of flows were attempted. In summary, personal income was viewed as a critical indicator, but a complete system of regional income accounts was judged not to be feasible.<sup>1</sup>

As matters stand currently, there are conceptual and methodological difficulties confronting the active implementation of a national system of regional economic accounts and serious problems concerning the resources that would have to be allocated to the development of such a program. The resolution of these difficulties and problems will be accomplished in a broad arena. The modest purpose of this section of the current study will be to examine one component of this larger data system, that is, "personal income" statistics. In keeping with the theme of this paper, emphasis is upon the data requirements and availability of such information for economic studies carried out in connection with planning and development activities in urban areas of Pennsylvania.

Brief reference was made earlier to the general uses of income data. Personal income data can be utilized at subnational regional and subregional levels for policy formation, resource allocation, appraisal of an economy's performance and for analyzing its structure and behavior. To be somewhat more specific, such estimates as county income figures are useful for measuring and assessing current and potential economic status, in comparisons of regional economic development relative to corresponding national measures or measures for other regions, as guides toward plant location and other investment opportunities and in a large variety of other areas of economic control and planning.

With the multiplicity of purposes and uses for regional income data indicated above, it is obviously extremely difficult to give any simple list of data specifications for the provision of the required information. Even when the question is narrowed to the specific data requirements for "personal income" for economic studies used in the planning and development of urban areas, clear cut guidelines are not easily available. Data availability for population and employment and consequently, description and analysis of such data have been much more frequently carried out in local economic studies than has been true for "personal income." Nevertheless, an attempt will be made below to suggest some "personal income" data requirement guidelines for such studies although it does not seem practical to try to list these in as great detail as has been done for population and employment.

Because of the general lack of availability of "personal income" figures for small areas, the data requirements suggested below will be on a county basis, with possible aggregation therefore, to standard metropolitan statistical areas or State economic areas. For population and employment, it will be recalled that data specifications were also given for municipalities within metropolitan areas. At the present time, such data on personal income are simply not available. As a matter of fact, official estimates of personal income by the U. S. Department of Commerce have generally been limited to a State basis except for some recent regional estimates based on county figures

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<sup>1</sup>Loc. cit., Hoover, E. M. and B. Chinitz, "The Role of Accounts in the Economic Study of the Pittsburgh Metropolitan Region," especially pages 266-270.



prepared for special economic base studies of the Delaware River and Potomac River Service Areas.

It is perhaps useful at first to indicate the general nature of income data which would aid in characterizing a regional or local economy and which would be essential for an understanding of the economic development of the area and for future planning regarding it. The analyst, if unfettered by the practical realities of the situation, would like to have time series data and current status information on aggregate levels of income for the area; he would like to have these data broken down into significant subgroups, such as by industrial source of income, by various population subgroups, and by sectors such as government and private (suitably subdivided) and would like analogous information for other areas and regions for comparison purposes. He would want to have the type of functional distribution of keenest interest to the economist, namely, into wages, profit, rent and interest. From the economic welfare viewpoint he would want the size distributions of household and individual incomes. He would want time series data of sufficient detail so that he could make a meaningful analysis of cyclical fluctuations in income and finally he would like to investigate the distribution of income as between investment and consumption, with an analysis of the disposition of personal income into tax payments, consumer expenditures, and saving.

Clearly, the planning or development analyst simply cannot obtain most of the data implied above. Restricting the requirements to personal income eliminates some of the list. However, this restriction is a practical one, since most of the regional income data available represent some variant of personal income. Furthermore, most regional economists would probably agree that analysis of regional personal income data, built up, say, from county data, has the potential of providing fruitful insights into a variety of economic planning and development problems. Counties represent reasonable units even if only for the fact that most governmental agencies report statistics on that basis. Also, of course, interest often inheres in the county as a unit, per se, since it is an operational political jurisdiction and many decisions are made utilizing it as a unit.

The point of view has been expressed in this and the earlier report in this series that data needs logically should stem from some framework of analysis. In most of the sophisticated regional economic studies which have been or are being carried out, population, employment and income estimates and projections are developed jointly through the use of a theoretical economic and demographic model. There would seem, therefore, to be some logic in trying to specify personal income data requirements for about the same time periods and geographic areas as have earlier been used in this paper for population and employment. That is, since this report attempts to state data requirements for a wide variety of economic studies in urban areas, it would seem to be advantageous to have population, employment and personal income data for corresponding temporal and spatial units. It must be recognized, however, that it would be rather futile to specify requirements for certain time series data on personal income because there is virtually no possibility of such data becoming available, whereas the same situations may not hold for certain aspects of population and employment data. A sense of balance seems clearly called for, therefore, in the statement of personal income data requirements. In the material given below, an attempt has been made both to maintain some comparability with the previously stated population and employment data needs, and at the same time not to wander off too far in

the direction of the idealistic type of income data requirements suggested earlier in this section.

Some discussion of the definition of "personal income" and various methods by which it might be estimated for county areas is pertinent before specifying data requirements. The basic data utilized for most county and regional estimates are the State personal income figures of the Department of Commerce. As indicated earlier, where interest is centered on regions such as metropolitan areas or State economic areas, estimates are usually made for counties and then these data are used as "building blocks" to set up the regions desired. These estimates of personal income for counties may be derived by a variety of methods, with probably the most practical and generally utilized of these techniques being the component-allocation method which starts with U. S. Department of Commerce State-wide estimates and distributes them among counties.

State personal income, as defined by the Department of Commerce is the current income received by residents of the State from all sources.<sup>1</sup> It includes transfer payments from government and business but excludes transfers among persons. Personal income is therefore a very broad measure of economic activity. The components of this aggregate are wages and salaries, including both monetary payments and payments in kind which are income to the recipient; other labor income consisting of such items as employer contributions under group insurance plans, private pension plans, compensation for injury, and other items; proprietor's income, consisting of the net business earnings of owners of unincorporated business; dividends; interest; net rental payments; and transfer payments consisting of payments by government and business to individuals where no current services are rendered. The term "resident" includes such "quasi-individuals" as non-profit institutions, private pension and private trust funds, health, and welfare funds. Personal income is a gross concept, since it is defined as a before-tax measure - that is, before deduction for income taxes and other personal taxes but after deduction for individuals' contributions to social security and other similar social insurance programs.

State personal income figures are essentially breakdowns of national totals, and State estimates of individual components are reconciled to the corresponding national aggregates. Although there are the inevitable problems of difference in definition, completeness and so forth, the Department of Commerce feels that the State data are of high quality and in general are as accurate as the national data.

Personal income is an "income received" concept. This is a particularly pertinent and useful measure for economic welfare considerations, as for example, in analyzing the size distribution of income to assess the concentration of income receipts, and in studying such matters as the effect of changes in prices on levels and distribution of income or the effects of cyclical fluctuations on income. However, the flow of income may also be viewed from the standpoint of its production rather than its receipt. Here, the concept is one

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<sup>1</sup>See Personal Income by States Since 1929, Office of Business Economics, U. S. Department of Commerce, U. S. Government Printing Office, Washington, D. C., 1956.



of net value of goods and services produced. Questions arise for income estimation of small areas as to whether one should measure the income produced by residents of an area or the net values of goods and services produced in the areas where the production processes are carried out. These differences in location of residence and ownership of productive factors pose serious conceptual and statistical difficulties.<sup>1</sup> However, most small area income estimates for geographical segments such as counties have represented attempts to measure "income received."

A variety of approaches is at least theoretically available for the estimation of county personal income. One might attempt to estimate county personal income directly by aggregating each of the components based upon data obtained from individuals and from available governmental records. This is simply not a practical approach because of the lack of ready availability of the necessary data within individual counties.

A second alternative is to estimate county personal income on the basis of a mathematical formula which relates personal income to other variables. One such application used a set of two linked regression equations to relate per capita income to a population variable (percentage of urban and rural non farm white population), a labor ratio, (average number of persons supported by each worker), and an industrial worker factor (percentage distribution of employment in major industry categories).<sup>2</sup> The regression equations were derived for States and with certain modifications were then used for estimating county and city per capita incomes in Virginia for two different years. There are numerous theoretical and practical deficiencies to such mechanistic procedures including the difficulty of adjusting relationships established at the State level down to the county level, lack of availability of county data for the independent variables, failure to treat the situs problem explicitly, and so on. In the present state of the art and with the current lack of small area data, such methods must be viewed as extremely tenuous.

Field surveys or censuses represent another conceivable approach, but may be quickly ruled out as being too costly for a program of frequent personal income estimation for all counties of a State such as Pennsylvania.

The most practical and economical procedure for county income estimation is the component-allocation method. This method usually takes the form of an apportionment of Department of Commerce State personal income estimates into counties on the basis of allocators presumed to be directly related to personal income. That is, the total of the related series for the county is expressed as a percentage of the corresponding total for the State and is then applied to the appropriate State personal income component. There are more than 100 components of income available in the Department of Com-

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<sup>1</sup>For discussion of differences between the concepts of "income received" and "income derived" for small areas see W. M. Adamson, "Measurement of Income in Small Geographic Areas," *Southern Economic Journal*, April, 1942, pp. 479-480 and Lewis C. Copeland, *Methods for Estimating Income Payments in Counties*, University of Virginia, Charlottesville, Virginia, 1952, pp. 1-3

<sup>2</sup>"Appraisal of Alternative Methods of Estimating Local Area Incomes," *Regional Income*, Studies in Income and Wealth, Vol. 21, National Bureau of Economic Research, 1957.



merce series.

More detail on the component-allocation method of county personal income estimation with emphasis on the Commonwealth of Pennsylvania's recent activity in this area will be given in the section on availability of personal income data.

An attempt will now be made to indicate some of the requirements for personal income data at the county level for economic studies used in urban planning and development in Pennsylvania, reflecting information on past trends, current status and projections.

It may be recalled that in spelling out requirements for data on population and employment, in most cases it was indicated as desirable that information be available by decades back to about 1920 with annual figures from about 1950 on. Ideally, it would be useful to have personal income data for the same time periods, but since Department of Commerce personal income estimates are available only since 1929, it would not be very meaningful to ask for such data prior to that year. Starting with 1929, what would appear to be needed is the time series basis for making reasonably accurate estimates of average percentage rates of change per year in the relevant components of personal income, to be specified shortly. It would, of course, not be necessary to have figures for each individual year, but rather for bench mark years for one or two points after 1929 in the pre-World War II period and then quite frequent data, perhaps about every two years in the post war period to the present. The usual care would have to be exercised that rates of change are measured between reasonably comparable cyclical periods, and that trend levels not be misinterpreted if, for example, primarily cyclical peak or trough periods are used as time series data.

It would ideally be desirable in the analysis of trend measures of personal income to be able to determine the extent to which movements were attributable to "real" shifts as opposed to those attributable to changes in consumer prices. Of course, there is a general lack of availability of relevant price indexes on a county or other general sub-State basis. As a matter of fact, there has been an absence of such data even on a State basis. In a pioneering study, Hurwitz and Stallings derived such State annual price indexes for the years 1929-1953.<sup>1</sup> The results of this study indicated that there were not marked differential price movements among States or regions composed of groups of States during that period. Therefore, relative trends in personal income in current dollars were quite close to the similar changes in real personal income. Little work has been done in obtaining measures of "real personal income" by the various States which have undertaken county personal income measurement. For a large metropolitan county such as Philadelphia, however, where the city is one which is regularly included in the consumer price surveys of the Bureau of Labor Statistics, experimentation in estimation of constant dollar personal income may be worthwhile, despite the existence of conceptual problems in nonavailability of perfectly appropriate deflation indexes.

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<sup>1</sup>See Abner Hurwitz and Carlyle P. Stallings, "Interregional Differentials in Per Capita Real Income Change," in Regional Income, Studies in Income and Wealth, Conference on Research in Income and Wealth, Vol. 21, Princeton, New Jersey, 1957, pages 195-265.

It would be desirable to have the personal income data subclassified by type of income and also by industry sources. Because of the general lack of availability of the industrial distribution of property income, transfer payments and personal contributions for social insurance, complete industrial distributions are not feasible. In some county and regional studies the industrial distribution is given for civilian earnings, (wages and salaries, other labor income and net income of proprietors); in others, the distribution is shown for wages and salaries alone. Although the industrial distribution is only a partial one, it is usually quite satisfactory because civilian earnings are so high a fraction of total personal income, often running about 80 percent. As indicative of desirable classifications of personal income by type and civilian earnings by industrial source, the breakdowns used in the U. S. Department of Commerce's 1960 Economic Base Survey of the Potomac River Service Area are given below.<sup>1</sup> An examination of county personal income studies performed by various States reveals these to be quite typical classifications, although in certain cases, States show more industrial detail by listing two to about five subclassifications under the various industrial categories.

#### Personal Income by Type of Income Earned

- Wages and salaries
- Other labor income
- Proprietor's income
  - Farm
  - Nonfarm
- Property income
- Transfer payments
  - Less: Personal contributions for social insurance

#### Sources of Civilian Earnings by Industry

- Farms
- Mining
- Contract construction
- Manufacturing
- Wholesale and retail trade
- Finance, insurance, and real estate
- Transportation, communications, and public utilities
- Services
- Government
- Other

It is particularly useful in planning and development analyses to obtain certain derivative data for the comparison of trends in the area in question with those of other geographical segments. Therefore, for example, growth rates in per capita personal income might be compared for counties, metropolitan or state economic areas, the State and nation. It would be revealing to analyze data on (say) counties deriving larger or smaller percentages of personal income from specified sources than some area taken as a standard, perhaps the

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<sup>1</sup>Economic Base Survey of the Potomac River Service Area, U. S. Department of Commerce, Washington, D. C., 1961.



metropolitan or economic area, State or nation. Comparisons of shares of geographical areas, employment, population and personal income accounted for by counties, metropolitan or State economic areas could also be quite fruitful.<sup>1</sup>

In considering the need for income data for purposes of regional analysis, it would ideally be desirable to have income estimates for at least three different stages of its production or flow.<sup>2</sup> Income may be viewed as (1) the net value of goods and services produced, (2) personal income or income received by individuals, or (3) the way in which income is spent, that is, income expenditure. These measures differ conceptually because of the exclusion and inclusion of different income items. Although it is not necessary to indicate the details of the differing income concepts here, it is important to note again that there are serious problems in small area income analysis arising out of differences between the locations of places at which income is received and those at which it is earned. Most businesses keep their books in terms of the place at which the business is located. Therefore, it is easier to obtain data on "income derived" from economic activities located in an area than of "income paid out" to individuals resident in an area. It is exceedingly difficult to establish and measure income for small areas completely consistently according to any given concept. Particularly difficult in the measurement of county personal income, for example, is the making of adjustments to allow for commuting of workers across county lines. Wages and salaries are generally available at place of work, whereas, a component such as property income is available on a "where received" basis. For these reasons, most State distributions of personal income by county represent something of a mixture of data on a "where received" and "where earned" basis. Frequently, in regional analysis, interest is centered upon "income received" by residents of the area. Some recent pioneering efforts in the estimation of county distribution of personal income by both county of source and county of residence made by the Bureau of Statistics, Department of Internal Affairs for Pennsylvania are described in the next section.

Although this paper is not addressed to the spelling out of data needs on the smallest area bases such as block, enumeration district, or census tract statistics, such information is essential for the day-to-day operations of many planning agencies. It is pertinent, therefore, to point out that income data on these smallest area bases are useful in urban renewal work, in connection with the planning of the clearance, conservation, and rehabilitation of areas, in analyzing markets for the reuse of cleared land, in the planning of relocation efforts, in identification and analysis of shifts of socio-economic groups among different areas of the community, in the planning of commercial facilities for community uses, and in general in connection with continuing analysis of the change in composition and redistribution of populations throughout the planning area. The U. S. Census has been publishing in its decennial censuses since 1940 a variety of family and individual income

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<sup>1</sup>For an example of this type of analysis, see Lancaster, J. L., Personal Income Estimates for Virginia Counties and Cities, 1957 and 1958, Bureau of Population and Economic Research, University of Virginia, Charlottesville, Virginia, 1961.

<sup>2</sup>See Lewis C. Copeland, Method for Estimating Income Payments in Counties, Bureau of Population and Economic Research, University of Virginia, Charlottesville, Virginia, 1952, pages 2 and 3 for a good discussion on the stages of income flow.



data classified by age, race, sex, family status, type of income, number of weeks worked, industry, occupation, and farm and nonfarm status. The availability of this information will be discussed in the next section. Perhaps it is sufficient to point out here that the overwhelming majority of planning officials who testified at the recent congressional hearings on the mid-decade census were agreed that the 10-year intercensal period was too long to wait for this type of small area data. Income seemed to be the most desired economic characteristic on a census tract, enumeration district, or block basis, and it is probably fair to say that the most articulately expressed need was the one for greater frequency of such benchmark data. That is, mid-decade censuses or surveys yielding essentially the same type of income information as appeared in the 1960 Census would seem to go a long way toward meeting the small area income data needs indicated above.

### Personal Income Projections and Forecasts

There was a rather complete absence of any attempt to project or forecast personal income and its components in the economic base studies produced in Pennsylvania which were examined in the preceding study of this series. This void in personal income projection was undoubtedly primarily attributable to lack of availability of past data on personal income at sub-State levels and perhaps also to a certain lack of familiarity with and conviction regarding the use of personal income as an analytical economic indicator.

What would appear to be ideally needed for economic studies carried out in urban planning and development activities are well worked out integrated sets of projections which would be embedded within some meaningful analytical framework. Thus, personal income projections would be produced along with population, labor force, employment and other figures in an internally consistent set of estimates. Such systems of projections can, of course, be produced at many levels of analytical sophistication.

An example of a very highly sophisticated estimation and projection system is the type of framework recommended by Walter Isard, in which income projections are produced in the framework of an interregional input-output model.<sup>1</sup> Sector outputs and employments, total employment, population and net migration estimates by region are derived and gross product of each region in the study can be measured at the production stage or at the points of household consumption, government or investment expenditure or at places at which households receive income and government receives revenue. The model can theoretically produce the detail for a full blown set of regional social accounts as well as internally consistent estimates for employment, population and migration. The conceptual and data implementation problems for this type of model are formidable, to say the least.

Another example of a complex, sophisticated model is the one used in the studies of the New York Metropolitan Region to produce internally consistent projections of regional population, employment and personal income as

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<sup>1</sup>See W. Isard et al, Methods of Regional Analysis, Massachusetts Institute of Technology and John Wiley and Sons, 1960, especially Chapter 12.

well as other variables for the years 1965, 1975 and 1985.<sup>1</sup> The model essentially works with data at the industry level, classifying firms within industries according to whether they deal primarily in a national market and all others, classified as "local market" firms. After the output of each industry has been so classified, the "local market" product for each industry is further subdivided among business, consumer and governmental body purchasers. At the risk of gross over-simplification, the resultant framework may be described as an input-output system in which 43 equations in 44 unknowns must be solved in order to produce the desired projections.

Another massive research program in projection is being carried out by the National Planning Association (NPA) in its National Economic Projection Series.<sup>2</sup> The NPA is developing a coordinated set of national, regional and State economic projections designed for use in regional economic analyses. Projections of important economic aggregates for major metropolitan areas are also scheduled for publication in 1963. Of particular interest are projections in progress by States in a somewhat less structured model than the aforementioned two of Isard and the New York Metropolitan Region of a list of economic indicators including population, distributed by age, labor force employment, subclassified in 2-digit S.I.C. manufacturing industry classifications and 1-digit non-manufacturing, personal income and disposable income (of households).

Obviously models of the complexity and research programs of the magnitude of those sketchily mentioned above are beyond the resources of most of the groups which carried out the economic base studies referred to in the previous monograph in this series.

The above description of methods of projection of personal income within a general regional analytical model serves the purpose of indicating the broad conceptual framework within which such projections may be generated. Perhaps somewhat more indicative of the types of personal income projection which might be carried out as first approximation approaches in regional economic base studies are those presented by the U. S. Department of Commerce in the economic base survey of the Potomac River Service Area.<sup>3</sup> Since this section of the paper is addressed to requirements for personal income projection in economic base studies in Pennsylvania, the Department of Commerce projections described below may be viewed as perhaps the minimal

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<sup>1</sup>See Berman, B. R., B. Chinitz and E. M. Hoover, Projection of a Metropolis: Technical Supplement to the New York Metropolitan Region Study, Harvard University Press, Cambridge, Massachusetts, 1961.

<sup>2</sup>See Regional Projections to 1976 Population, Labor Force, Employment, and Income, Technical Supplement #8, National Economic Projection Series, 1962 and Economic Projections to 1976 and 1985: National, Industry and Metropolitan Area Indicators, Technical Supplement #10, National Economic Projection Series, 1962.

<sup>3</sup>See Economic Base Survey of the Potomac River Service Area, U. S. Department of Commerce, U. S. Government Printing Office, Washington, D. C., 1961, especially page 73. For a brief summary of methods of estimation of personal income for regions and sub-regions, see also Graham, R. E., "Measuring Regional Market Growth," Survey of Current Business, U. S. Department of Commerce, January, 1959.

type of projections to be carried out in metropolitan regional studies in the Commonwealth.

The projections of personal income for the Potomac River Service Area and its subregions (36 counties were grouped into 5 subregions) for 1965, 1985 and 2010 stem from a projection of gross national product for these years. On the basis of extensions of past trends in the relationship of three major components of national personal income, (farm, government, and private nonfarm), to the relevant components of gross national product, estimates of these national personal income components were derived for the three future years. A check procedure consisting of a regression analysis projection of total national personal income based on its relationship to gross national product indicated a close conformity to the total derived from the more detailed estimates.

Based upon shifts in the breakdown of national income components since 1929, national personal income projections for 1965, 1985, and 2010 were subclassified by industry and type of income. The same subclassifications were used for personal income for the Potomac area and subregions for the years studied since 1929. After these components were expressed as percentages of the corresponding national figures and account was taken of past trends and cyclical influences, the percentage shares were projected for 1965, 1985, and 2010. The projected shares were then applied to the pertinent national totals, yielding subregional and Potomac area totals for personal income components.



## Nature of Available Data

There is a paucity of income data available for purposes of regional and local economic planning and development. For regional economic surveys there are usually no readily available secondary series which may directly be used for the purposes and geographic areas of interest to the analyst. Detailed and time-consuming procedures are usually necessary to construct the required series. The need for data for geographic areas smaller than States has given rise in recent years to considerable activity in county income estimation.<sup>1</sup> As earlier indicated, these county estimates are then often combined to form regions such as metropolitan areas or State economic areas of interest to the investigator. A brief statement concerning county income estimation will now be given with emphasis upon the Commonwealth of Pennsylvania's recent activity in this area. Following that, some consideration will be given to other sources of income data for areas smaller than States.

A number of different approaches to the estimation of personal income by counties were given in the section on data availability, with the component-allocation method being indicated as the most generally satisfactory. This is basically the method used in the derivation of county estimates for Pennsylvania. A description follows of the personal income estimates for the 67 counties of Pennsylvania recently derived by Emmett Welch, Director of the Bureau of Statistics, Department of Internal Affairs and members of his staff.

The description of the estimates given below represents a very brief summary of the Bureau of Statistics report on personal income by county in Pennsylvania.<sup>2</sup> Since the type of detail given in that report is not warranted here, only an outline of the estimation procedure is herein included. Estimates were prepared for the following selected years: 1929, 1940, 1947, 1951, 1955, 1959, and 1960. Abdul G. Khan of the Pittsburgh Regional Planning Association under the supervision of Edgar M. Hoover carried out much of the exploratory work on the methodology used in the estimation procedure under a contract with the Pennsylvania Department of Internal Affairs.

Two kinds of distributions were made of U. S. Department of Commerce annual State estimates of personal income by type: (1) by Pennsylvania county in which personal income was earned or paid out and (2) by Pennsylvania county of residence of income recipients. The "component-allocation" procedure which was utilized, as the name implies, allocates or apportions State personal income components among the counties of the State. This apportionment is

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<sup>1</sup>See, for example, Personal Income, A Key to Small Area Market Analysis, U. S. Department of Commerce, U. S. Government Printing Office, Washington, D. C., 1961 for a discussion of the sources of small area personal income data. See also, Lewis C. Copeland, Methods for Estimating Income Payments in Counties, and County Income Estimates for Seven Southeastern States, both published by the University of Virginia, Charlottesville, 1952 for bibliographies of individual State and nationwide studies of county income and see the latter publication, pages 2-4 for a historical survey of attempts to supply these estimates.

<sup>2</sup>Pennsylvania's Personal Income, 1929-1960, Report No. I-1, Department of Internal Affairs, Commonwealth of Pennsylvania, 1963.

accomplished by the use of most appropriate allocators for each item of personal income. The following steps are involved in the allocation procedure: An allocator is chosen which is closely related to the specific component of personal income to be distributed. A ratio is obtained between the county total of the allocator to the corresponding State total of the allocator. This ratio or percentage is then applied to the specific component of the U. S. Department of Commerce State personal income figures to yield a county estimate of that component.

The general method by which wages and salaries, income from professional services, income of farm proprietors, income of non-farm proprietors, and other income were distributed among counties in Pennsylvania is as follows:

Wages and salaries - allocated primarily on the basis of wage and salary data available by counties in Pennsylvania. The Bureau of Employment Security, Pennsylvania Department of Labor and Industry collects data on wages and salaries paid by industries covered by Unemployment Compensation. These data, which are tabulated by industry and county for one quarter of each year were used to allocate among counties wages and salaries for all covered industries except manufacturing. This allocation was accomplished for the years from 1940 to the present. Manufacturing wages and salaries were distributed among counties using as an allocator data on wages and salaries from the annual industrial censuses conducted by the Bureau of Statistics, Department of Internal Affairs in Pennsylvania. In the case of time periods and industries not covered by unemployment compensation or by the Bureau of Statistics Industrial Censuses, wages and salaries generally were allocated through the use of Censuses of population and agriculture data on employment. Interpolation procedures were usually used to obtain intercensal estimates.

Income from professional services - allocated to counties based on the number of doctors, lawyers and dentists in each county.

Income from non-farm proprietors - allocated to counties according to the number of proprietors in each county. These latter numbers were estimated from the Censuses of business, manufacturing, minerals, and other sources.

Income of farm proprietors - allocated to counties based on farm income and expenses data from the U. S. Census of Agriculture, the Agriculture Marketing Service of the U. S. Department of Agriculture, and the Pennsylvania Department of Agriculture.

Property income - allocated on the basis of U. S. Bureau of Internal Revenue tabulations of personal income tax returns, the U. S. Census of Housing, sales of U. S. savings bonds, and time deposits in banks.

Other income components - allocated to counties based on population, number of veterans, and other data. The details on specific allocation methods for all personal income components are given in the Bureau of Statistics, Department of Internal Affairs report referred to above.

Adjustments were made for inter-county differences in earnings rates on non-farm and non-military wage and salary components which had been



distributed to counties based on employment and population allocators. No appropriate basis was found for similar adjustment in inter-county differentials of farm workers' earnings.

It is clear that if the allocated items of personal income, as described above, are aggregated for each county, the resulting totals would represent a mixture of income on a "where earned" and "where received" basis. When components of income are distributed on the basis of disbursing or employing establishments, the resultant allocation is on a "where earned" basis (county of source). When components of income are distributed on the basis of population data, the resultant allocation is on a "where received" basis (county of residence of income receivers). The estimation procedures used in the Department of Internal Affairs report to yield separate county personal income estimates by county of source and county of residence are described below.

In regional economic base studies where estimates of personal income have been constructed, the problem of commuting across county lines has usually been handled by the grouping together of counties into meaningful economic or labor market areas so that commuting across these larger geographic boundaries is minimized. The use of this procedure means, of course, that county personal income estimates are simply not presented. The Bureau of Statistics, Pennsylvania Department of Internal Affairs has derived county personal income estimates on both a "where-earned" and "where-received" basis through the use of appropriate county net commuting ratios. These net commuting ratios are county ratios of employment on a "where-received" basis to employment on a "where-earned" basis. Conceptually, these net commuting ratios when multiplied by income figures on a county of source ("where-earned") basis yield data on a county of residence of recipient ("where-received") basis, and when divided into income figures on a county of residence of recipient basis yield county of source data. Ratios of adjusted 1960 census employment figures for each industry group covered by unemployment compensation to the corresponding first quarter of 1960 figures for covered employment were computed by county.<sup>1</sup> If a ratio exceeds 1.0 for a county, it means that the number of workers residing in the county employed in the given industry exceeds the number of workers in the given industry whose wages and salaries were disbursed in that county. It may, therefore, be inferred that the number of workers living in the county but employed in the given industry in other counties exceeds the number of workers living in other counties employed in the given industry in that county. The converse relationship holds for ratios less than 1.0. These county net commuting ratios were computed for mining; construction; manufacturing; wholesale and retail trade; finance, insurance, and real estate; transportation except railroads, communication, and public utilities, and services.

Special treatment was given to the construction and government employment categories with county net commuting ratios being computed for these

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<sup>1</sup>County employment figures from the 1960 population census for each industry group covered by unemployment compensation were adjusted pro rata in such a way that state totals from the census equalled state totals of covered employment for the first quarter of 1960. Since the aforementioned pairs of totals were close, except in the case of construction, the pro rata adjustments generally were small.



two industries combined.<sup>1</sup>

The 1960 county net commuting ratios were used for all estimate years. The calculation of individual rates for each year would have been desirable, of course, but required data were simply not available. Tests performed on net commuting rates for manufacturing for 1930, 1950 and 1960, however, indicated no clear-cut pattern of either upward or downward shifts in the ratios.<sup>2</sup>

The procedure described above represents one of the rare attempts to grapple with the troublesome situs problem in county personal income estimation.

The preceding discussion on county personal income estimation reflects the recognition of and the attempt to remedy the lack of readily available small area income figures. A number of governmental agencies produce income data, with some of these sources showing small area figures at rather infrequent intervals and some not producing this geographical detail at all. Also, there are several commercial sources which regularly publish personal income data for counties of the United States. The discussion below deals with some of these sources of income data.

The Bureau of the Census in connection with the decennial census has produced a variety of sub-State income data since 1940. The most recent data will be discussed first.

The 1960 census income data were based on a 25-percent sample of the population, utilizing a pre-listing of households. The data obtained from respondents were 1959 income figures for families and persons. Total income, as defined by the Census, consists of wages and salaries, self-employment income and income from sources other than earnings. The complete definitions of these components of total income may be obtained from Bureau of the Census sources. It probably suffices to indicate that "wages or salary" represent total money earnings received for work performed as an employee; "self-employment income" is net money income derived from a business, farm, or professional enterprise in which the person was engaged for his own account; and "income other than earnings" includes money income received from sources other than the previously given two categories. The last named classification includes property, rental and transfer income.

Essentially similar income data were tabulated in 1950 from a 20-percent sample of persons 14 years of age or older. Size distributions of income were published in both periods for families and unrelated individuals for States, counties, standard metropolitan statistical areas, urbanized areas, urban places, and selected townships. Also various data were published such as median earnings of selected occupation groups and type of income. Incomes

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<sup>1</sup>Inconsistencies appeared to be present between the 1960 population census and the place of work classifications for these two industry groups. Government employment (excluding education) figures on a "where earned" basis were obtained from the U. S. Civil Service Commission, the Governor's Office, and the U. S. Census of Governments.

<sup>2</sup>For manufacturing, ratios of U. S. Census of Population estimates were related to Pennsylvania Department of Internal Affairs industrial census employment data by county for the three indicated years.

of persons were shown classified by economic and demographic classifications and cross-classifications using variables such as age, race, sex, family status, weeks worked and type of income. In some cases, data were published only for States, urban-rural, and standard metropolitan statistical areas above certain population sizes. In others, the data were given in geographic detail down to urbanized areas, urban places of 10,000 or more, counties, and census tracts. Some detail was given on wage and salary incomes of the experienced labor force for States, some standard metropolitan statistical areas and urban places.

While the published 1950 and 1960 census data on total money income were reasonably comparable, (except in some respects to be indicated below), the 1940 income data represented only amounts of money wages or salary received in 1939 and are thus not comparable with statistics from the later censuses. Also, there was much less geographical detail shown for the wage and salary income data in 1940 than was shown in the labor censuses for total money income.

Illustrative of the availability of smallest area data from Census sources is the fact that in 1960 the Census published for each tract in tracted areas the size distribution of incomes of families and unrelated individuals (separately for nonwhites for selected tracts). The same data were tabulated and available on magnetic computer tape and also as unpublished tables for census tracts, and for various geographical subdivisions outside tracted areas.

Various types of unpublished statistics were obtainable from the Bureau of the Census with numerous special tabulations being preparable on a reimbursement basis. The above description, however, serves to indicate the general nature of data available from this source.

The basic incomparability of 1940 Census income data with such data from later censuses has already been noted. Although the 1950 and 1960 income data were quite similar, a few incomparabilities are worthy of mention. The sampling method used in 1960 differed from that of previous censuses. To state the situation very briefly, in 1960 the 25-percent sample for socioeconomic data was drawn from pre-listed households whereas previous samples were based upon the individual as a sampling unit. In 1960, income data were elicited separately from each person 14 years and older in the sample. In 1950, if the sample person was the family head, he was asked the income questions for other family members as a group to obtain the total family income.

In 1960, imputations of income were made for non-respondents by assigning the reported incomes of persons with similar characteristics, whereas in 1950, when only the head of the family's income was reported, it was assumed there was no other income in the family.

The census data are useful for the multiplicity of purposes earlier enumerated in connection with economic planning and development, but they are subject to numerous difficulties. An exhaustive appraisal of the 1950 census income data has been made in one of the National Bureau of Economic Research Studies in Income and Wealth,<sup>1</sup> and since the 1960 income data are essentially

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<sup>1</sup>An Appraisal of the 1950 Census Income Data, Studies in Income and Wealth, Volume 23, National Bureau of Economic Research, New York, 1958.



the same as those collected in 1950, most of the points made in this volume are equally valid for the 1960 data. It is not feasible nor relevant to attempt to recount most of these difficulties here, but a brief summary of certain points seems appropriate, particularly those which refer to small area data.

First of all, it can be pointed out that since the census income information may be classified as survey data, it is subject to all of the usual limitations of income information collected by that method. Two of the major weaknesses are error arising from underreporting of income and response variability. The National Bureau studies, in comparing answers to income questions with income reported independently by the same or "matching" income recipients in other surveys such as conducted by the Internal Revenue Service, Survey of Consumer Finances and the Old-Age and Survivors Insurance system concluded that despite the differences in collection methods and the small proportion of success in "matching", that median incomes were rather close for the matched respondents and for broad subgroups, except in the cases of farm and entrepreneurial incomes. While not reaching any definite conclusions on the general superiority of one survey technique over another, the studies confirmed, however, substantial underreporting errors and sizable response variations in income surveys. On the latter point, for example, even though fairly wide income classes were used, only 61 percent of persons fourteen years or older were found in the same income interval in a 1950 Census - Current Population Survey match only one month apart and where the wording of the income questions was virtually identical. Furthermore, these studies indicated a point that might be expected, that is, the results depended very heavily on differences in collection and processing methods, and in income time period and reporting unit definitions. Finally, it must be noted that the income data reported are usually based upon memory rather than upon objective business records.

Mansfield enumerated a number of difficulties for small area analysis, including the combination of data on families and unrelated individuals, the limited use of the urbanized area concept, the inclusion of income of college students, and the combination of data on families and unrelated individuals, by color.<sup>1</sup> In indicating these problems, Mansfield notes that data are collected for a variety of purposes and that they would therefore be expected to have limited usefulness for particular purposes. Therefore, other persons would designate other lists of problems.

Another problem characteristic of survey data is the necessity to restrict the income concept to coincide as closely as possible to what the respondent considers as his income. This means that certain types of income which might be included in the national income statistics are excluded such as imputed forms of income. Also, in census data, the family is defined biologically, whereas for many purposes the concept of the economic family or spending unit such as is used by the Survey of Consumer Finances or Office of Business Economics is more useful.

A major problem with decennial census income data for continuous planning and development purposes is the long time period elapsing between successive censuses. Most of the points made earlier in the chapter on population concerning difficulties arising from the rapid obsolescence of census

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<sup>1</sup>Loc. cit., comment by Edwin Mansfield, pages 118-124.



population data are valid for income data, too. Although the Current Population Surveys collect some income data between the decennial censuses, these surveys are not designed to yield small area data. Furthermore, this source does not yield income data by occupational classifications.

A number of differences should be noted between the nature of the Census income data described above and personal income data stemming from the U. S. Department of Commerce. The Census income data are derived from personal interviews; the Department of Commerce data are derived mainly from business and governmental sources. Certain items are included in the personal income measure which are not included in the Census income concept, as, for example, income in kind, the value of the services of banks and other financial institutions rendered to persons without charge, and so forth. Items included in the Census definition and not in personal income include contributions for support received from persons not residing in the same household, and employee contributions for social insurance.

The Internal Revenue Service, (IRS), another source of income statistics, has begun to publish such data on a metropolitan area basis. In the 1959 issue of Statistics of Income, Individual Tax Returns are shown for the first time selected sources of income, adjusted gross income, taxable income and income tax for the 100 largest standard metropolitan statistical areas, including 10 in Pennsylvania. These data are based on a sample of unaudited individual income tax returns from the population defined by the requirements for the filing of an individual tax return. Numerous differences exist, of course, between IRS coverage and definitions of income and those of other sources of income data.<sup>1</sup> Continuation of this program of reporting income data for metropolitan areas could potentially result in a useful set of time series statistics.

The Office of Business Economics (OBE), U. S. Department of Commerce is currently engaged in the preparation of estimates of personal income by metropolitan area.<sup>2</sup> The estimates will be prepared initially for a limited number of metropolitan areas, and then will be extended to cover all areas as time and resources permit. Details concerning the specific techniques and timing in estimating individual components are not currently available, but the sources and methods of estimation will proceed along the lines of the Delaware River and Potomac River Service Area studies.

Other federal sources of income data include the Social Security Administration and the Federal Reserve Board. These agencies, however, do not publish data designed to be useful for small area analysis. The intermittent surveys of consumer expenditures, incomes and savings by the Bureau of Labor Statistics, U. S. Department of Labor yield income data for small areas such as cities, but these surveys are so far apart in time and so oriented toward collection of expenditures rather than income data, that they can not be viewed as an important source of income statistics.

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<sup>1</sup>For a comparison of Census and IRS income data, see "Income reported in the 1950 Census and on Income Tax Returns," An Appraisal of the 1950 Census Income Data, Studies in Income and Wealth, Volume 23, National Bureau of Economic Research, New York, 1958.

<sup>2</sup>Information about these estimates was obtained in a letter from Robert E. Graham, Jr., Office of Business Economics, Department of Commerce, Washington, D. C., dated December 31, 1962.

Some States have income taxes and useful local area income statistics are, therefore, generated by the system. The Commonwealth of Pennsylvania has no such tax. There are, however, instances of local area taxation, such as the Philadelphia wage tax system, which could be more intensively utilized as sources of income data.

Several commercial organizations produce personal income estimates for States and smaller areas on a continuing basis. Sales Management, of New York, publishes in its Survey of Buying Power annual household income estimates for all counties, cities, and metropolitan areas of the United States. The concept used is disposable personal income, termed "net effective buying power" by the Survey. Following the U. S. Department of Commerce definition, tax payments are subtracted from personal income; imputed rentals of owner-occupied homes are included. Beginning in 1959, the Survey of Buying Power introduced a new measure, "net effective cash income" designed to measure the amount of cash income available to households for spending after payment of taxes. This subtracts from "net effective buying income" all non cash or income in kind items such as food and fuel produced and consumed by farmers and imputed rentals of owner-occupied dwellings, and so forth. For post-censal years, income estimates are obtained by a procedure based primarily on projection of the growth in numbers of households. For about the past five years, Sales Management has been publishing data on income distributions of households as opposed to showing merely income averages.

Another private organization which publishes annual breakdowns of personal income by States, counties, cities, and metropolitan areas is the Standard Rate and Data Service of Skokie, Illinois. This organization publishes identical calendar year and fiscal year data in three magazines, Spot Television Rates and Data, Newspaper Rates and Data, and Spot Radio Rates and Data. The income concept is "consumer spendable income," quite similar to the Department of Commerce's "disposable personal income" measure. Punch cards are available from both Sales Management and Standard Rate and Data Service on a fee basis and special tabulations may also be prepared.

Personal income data by county for the current year and estimates for the next year are published by The Editor and Publisher Company, New York in the Editor and Publisher Market Guide for all States but Alaska.

It is extremely difficult to evaluate the County personal income estimates produced by commercial sources. Certainly, they are subject to many limitations stemming from the fact that except in decennial census years, the estimates do not result primarily from direct collections of income figures. Also, it is difficult to ascertain the specific estimation methods used. Nevertheless, these data can be quite useful, since they represent time series information on county income derived on a relatively uniform basis.

In the next part, an attempt will be made to evaluate the availability of sub-State income data against the requirements for such data in economic studies for urban planning and development in Pennsylvania.



## Evaluation of Data Requirements Versus Availability

It is clear from much of the foregoing discussion that the provision of useful income data for urban planning and development purposes is in its embryonic stages in Pennsylvania, and other states as well. The beginning of work on the establishment of sets of regional social accounts by the Pennsylvania State Planning Board is a most constructive development and is indicative of the broad rubric within which income data should be produced. There can be little doubt that the construction of such sets of accounts will provide a powerful and flexible framework for the analysis, understanding and appraisal of regional and local area economic structures and an immensely improved basis for economic planning, policy-formation and decision-making in these areas. The development of personal income estimates by counties of Pennsylvania represents a much needed interim step and will no doubt provide an important and useful data foundation for the implementation of eventual regional sets of accounts. The ensuing discussion evaluates the availability of sub-State income data for Pennsylvania in the light of requirements for urban economic base studies, with particular emphasis on county personal income estimates.

The construction of county personal income estimates for Pennsylvania for 1929, 1940, 1947, 1951, 1955, 1959 and 1960 constitutes a much-needed filling of a gap in our knowledge of the ebb and flow of the types of personal income and industrial sources of this income over time. It was indicated earlier under data requirements that a basis was required for the reasonably accurate estimation of percentage rates of change per year in these components of personal income by counties. As can be seen from the list of dates of the Pennsylvania estimates, post World-War II figures have been provided for at quite frequent intervals. From the standpoint of historical analysis of income-component change, it would be desirable to have comparable data for at least one year between 1929 and 1940 in the pre-war period. The Pittsburgh Regional Economic Study has derived personal income estimates for three pre-war years, namely, 1929, 1937 and 1940. Several difficulties exist in the construction of time series estimates of county personal income in Pennsylvania. Data on covered employment and payrolls from the Pennsylvania Bureau of Employment Security are not available for years earlier than 1940 and county payroll data are available in less industrial detail for the earlier years. Furthermore, for many components, different allocators must be used for different points in time because the most desirable allocators are not available for all estimate dates. Since there have been pronounced cyclical fluctuations in the post-war years, it is perhaps pertinent to reiterate the caveat that assessments of trends should be made between reasonably comparable cyclical positions.

It may also be noted, on the subject of time series data on income, that there is a general lack of availability of information on the size distribution of incomes for geographical segments such as counties or metropolitan areas. As noted in earlier discussion, such distributions are given by the U. S. Census for families and unrelated individuals for counties and standard metropolitan statistical areas on a comparable basis in 1950 and 1960. These are useful benchmark data, but are undoubtedly too far apart in time for careful study from an economic welfare standpoint of changing income distribution patterns in urban areas. For this type of analysis, more work could be done on the combined use of Census and Internal Revenue Service data for metropolitan areas.



We turn now to the matter of the breaking down of county personal income data into significant subgroups for planning-development oriented analyses. Average personal income data by counties have been available from commercial sources on an annual basis, in certain cases, for a long period of time. However, the major gap in county personal income has been for significant classifications of income such as by type and industrial source. In planning and development work, breakdowns by type of income are particularly useful for comparisons among population groups within and between counties. As W. M. Adamson states on this point, "This type of comparison is essential because county aggregates and per capita figures based on entire population do not afford adequate comparisons between counties which are fundamentally different in economic structure. Since a number of commodities and services of importance in an agricultural economy do not pass through the market place estimates typically understate the income received by persons living on farms compared with that of persons living in cities. For this reason an agricultural county which has a comparatively small nonfarm population may rank high in both farm per capita income and nonfarm per capita income but rank much lower in per capita income of its own population."<sup>1</sup>

Breakdowns by industrial source of income are useful for the determination of the dependence of the various counties upon different industries as sources from which their income is derived, particularly where only one or two main industries account for large proportions of total income. The amount of detail on types and industrial sources of income available from the recently derived estimates for Pennsylvania counties is quite consistent with that shown by other States which have county income estimation programs and represents a much needed addition to our stock of sub-State income data.

On the matter of projections and forecasts of personal income, it was indicated under data requirements, that ideally, integrated sets of projections of personal income and other demographic and economic variables within an analytical framework should be provided in urban economic studies. It is quite clear that only large well-financed regional studies have the analytical and material resources required to carry out such projections. With the availability of the new personal income estimates by Pennsylvania counties, however, some experimentation with more expedient projection procedures, such as those used by the U. S. Department of Commerce in the Potomac River Service Area study, would seem to be called for in economic base studies for appropriate areas. Even simple short term projections based on past trends in personal income components with superimposition of cyclical adjustments might be useful.

It may be noted at this point that an evaluation of the detailed procedures used in deriving county personal income estimates for Pennsylvania is beyond the resources and scope of this study. There is, however, a need for additional effort to be devoted to the problem of the improvement of these estimates. Well informed judgment would have to be exercised in the use of resources devoted to this problem. For example, there is a need for improvement in the allocators used in estimating components of personal income. However, many of the individual components are relatively small in magnitude and, therefore, the cost of potential improvement may very well outweigh the

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<sup>1</sup>Adamson, W. M., Measurement of Income in Small Geographic Areas, Southern Economic Journal, April, 1942, pages 483-484.

benefits to be derived in such cases. There are clearly no simple quantitative measures of reliability that may be attached to estimates such as county personal income. The utility of such figures must be evaluated in terms of the particular purpose of the study in question. There is little doubt that with the existence of the new county personal income estimates for Pennsylvania, a needed improvement has been brought about in the ability to analyze the economic structure and change of Pennsylvania counties.

The next part offers some general recommendations for the improvement of county personal income estimates in Pennsylvania.

## Recommendations

It is recommended:

1. That increased effort and resources be devoted to the estimation of personal income by counties in Pennsylvania. The Bureau of Statistics, Department of Internal Affairs should develop these income estimates on a continuing basis, with current revisions and estimates, particularly with the long run view toward generating comparable county time series data.

2. That further research be instituted into the sources of available data, into the improvement of these sources and into the possibilities of utilizing different types of data than are currently used in income estimation.

3. That a close coordination be effected between the county personal income estimation program of the Bureau of Statistics, Department of Internal Affairs and the development of sets of regional accounts in the proposed economic study of the State by the Pennsylvania State Planning Board.

4. That further study be given to the difficult commutation problem and that alternative methods of obtaining income estimates on a "where received" and "where earned" basis be investigated. The utilization of occasional sample surveys is particularly appropriate in this connection.

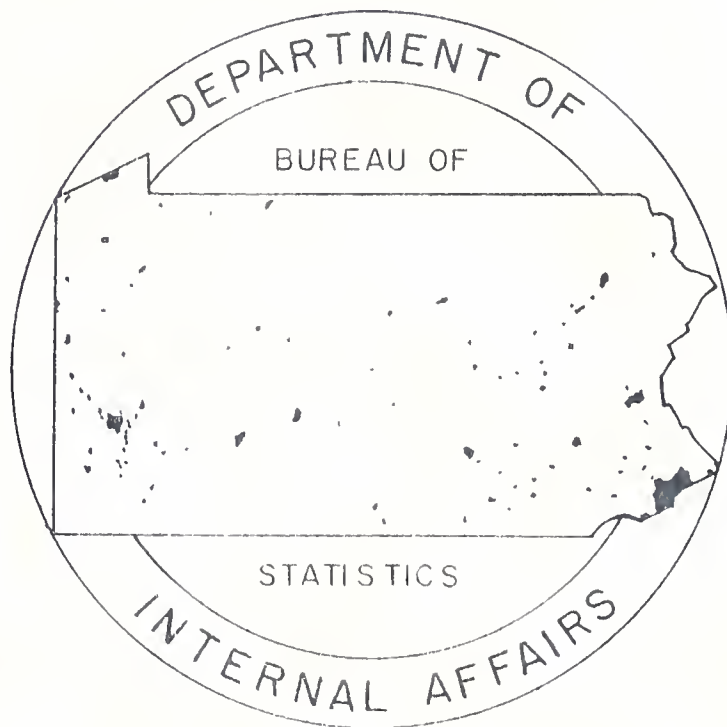
5. That research on and testing of alternative methods of allocation of State components be carried out with the aim of reflecting as accurately as possible the county distribution of personal income. For example, in the allocation of certain components of income where numbers of employees or similar population statistics are utilized, adjustments for county differentials in average earnings were made by the Bureau of Statistics, Department of Internal Affairs in preparing the county personal income estimates published in Pennsylvania's Personal Income, 1929-1960. Further research, including experimentation with regression methods and other statistical techniques, should be undertaken.



**SELECTED METHODS OF ANALYSIS FOR URBAN ECONOMIC PLANNING  
AND DEVELOPMENT IN PENNSYLVANIA; COMMENTARY ON REGIONAL  
ECONOMIC ACCOUNTING SYSTEMS, BENEFIT - COST ANALYSIS AND  
STATISTICAL DECISION THEORY**

By

**Morris Hamburg and Thomas W. Langford Jr.  
Wharton School of Finance and Commerce  
University of Pennsylvania**



**DEPARTMENT OF INTERNAL AFFAIRS  
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**FEBRUARY 1964**

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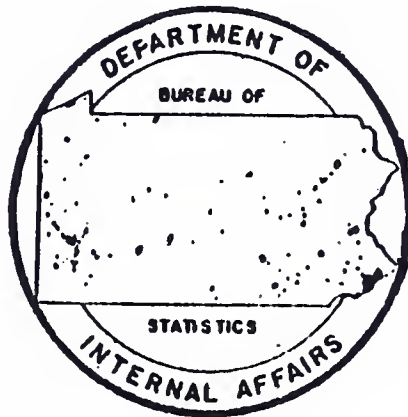
Commonwealth of Pennsylvania  
DEPARTMENT OF INTERNAL AFFAIRS

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February 1964



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4. POPULATION AND AREA OF MUNICIPALITIES IN PENNSYLVANIA (S-9) - County map diagrams showing municipalities with area in square miles and 1950 and 1960 Census population figures. Ward population figures are given for Philadelphia, Pittsburgh, Erie, and Scranton. 70 pages. Price \$1.00 (plus 5¢ state sales tax for Pennsylvania residents).

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M-2 1964 Statistics by Major Industry Group for Counties and Urban Places (also 1957, 1962, and 1963) - Same data as M-1 classified by major industry group (2-digit) for each county and selected cities and boroughs.  
M-4 1964 Statistics by Industry and By Size of Establishment (also 1957-1960, 1962, and 1963) - Same data as in M-1 classified by industry group (4-digit) and by size of establishment within major industry group (2-digit). Also changes in number of establishments and related employment changes classified by new, discontinuing, inter-county migration and other. Above data classified by county and major industry group (2-digit).  
M-5 1964 County Industry Reports (also 1961-1963) - Separate report for each county. Same data as in M-1 classified by industry group (4-digit) and by city, borough, and township.

M-6 (Ft-63). 1963 Exports by Pennsylvania Manufacturing Establishments (also 1961 and 1962) - Number of exporters and value of exports, by county and by industry group (4-digit) for the state; list of products exported (4-digit) by manufacturers in each county; number exporting through each U. S. port; and number exporting to each country.

M-7 1963 Directory of Pennsylvania Manufacturing Exporters. Alphabetical Section - An alphabetical listing of all Pennsylvania manufacturing exporters, showing plant location, mailing address, and a list of the products exported by each. Products Section - A listing of products exported (4-digit) and the names and addresses of the exporting establishments. Each establishment is listed under every product (4-digit) which it exports.

M-8 1964 Statistics for Selected Pennsylvania SMSA's - (also 1963) Same data as in M-1 classified by industry group (4-digit) for 6 multi-county Standard Metropolitan Statistical Areas.

6. PUBLIC UTILITY STATISTICS  
(Based on the annual Census of Public Utilities in Pennsylvania. Number of utilities, plant investment, capital expenditures, revenue and expense, wages and salaries, number of employees, number of customers, and production in units.

U-1 1964 Statistics for Electric Utilities in Pennsylvania (also 1956-1959, 1962, and 1963).

U-2 1964 Statistics for Gas Utilities in Pennsylvania (also 1956-1960 and 1963).

U-3 1964 Statistics for Telephone Utilities in Pennsylvania (also 1956-1963).

U-4 1964 Statistics for Water Utilities in Pennsylvania (also 1956, 1958-1959, and 1961-1963).

U-5 1964 Statistics for Sewer Authorities in Pennsylvania (also 1957-1959, 1961, and 1963).

U-6 1964 Statistics for Motor Bus and Electric Transportation Companies in Pennsylvania (also 1956, 1958-1960, 1962, and 1963).

7. MUNICIPAL AUTHORITY STATISTICS

A-64 1964 Statistics for Municipal Authorities (also 1957-1959, 1962 and 1963) - Number of municipal authorities by year of incorporation and purpose; and number of projects and amounts of bonds outstanding, by county and purpose.

8. INCOME AND POPULATION STATISTICS

IP-1. Pennsylvania's Personal Income and Population by County: Selected Years 1929 - 1963 - Estimates of personal income, population, and per capita income for each county for 1929, 1940, and 1947-63; estimates of personal income by county of residence of recipients and by county of source for 1920, 1940, 1947, 1951, 1955, and 1959-63; classified by type of income and industry source; and chart of population estimates 1929-62 for each county.

9. SPECIAL RELEASES

S-2 Industrial Statistics for Pennsylvania 1951 to 1955- Number of establishments, number of employees, wages and salaries, capital invested, value of production, and value added by manufacture. Above data classified by major industry group, county, and selected cities and boroughs.

S-8 Reapportionment in Pennsylvania (Revised 1965) - Statistical tables, maps, and textual explanation bearing on the reapportionment problem; a list of recent court cases on apportionment; and a list of selected references on apportionment. Statistics include population, voter registration, votes cast, and deviation from principle of equal representation; by State Representative, State Senatorial, and Congressional Districts.

## PREFACE

This is the third and last in a series of three reports published in consequence of a study of data requirements and methods of analysis for urban economic planning and development in Pennsylvania. The study and the reports based thereon were prepared under a contract between the Department of Internal Affairs and Dr. Morris Hamburg, Wharton School of Finance and Commerce, University of Pennsylvania.

The Department of Internal Affairs through the Bureau of Municipal Affairs and the Bureau of Statistics seeks to provide services to local governmental units. We believe that the three reports in this series will assist us in providing these services. We hope that they will also assist local governmental units in the use of these services.

We welcome the comments of readers on this as well as on the other two reports in the series, particularly because they represent a departure from the usual type of reports which we have been preparing and publishing. If they prove useful, we shall hope to develop others of the same type in the future.

A handwritten signature in cursive script, reading "Genevieve Blatt". The signature is written in dark ink and is positioned above the printed name and title.

Genevieve Blatt  
Secretary of Internal Affairs



## FOREWORD

This is the third and final report in a series of studies carried out under a contract with the Department of Internal Affairs, Commonwealth of Pennsylvania. The project represents a study of data requirements and methods of analysis for urban economic planning and development in Pennsylvania. The first monograph presented a description and evaluation of economic surveys recently carried out in Pennsylvania under the Urban Planning Assistance Program of the Federal H.H.F.A., focusing mainly upon types of data and methods of analysis used in such studies.<sup>1</sup>

The second study was an evaluative report on selected regional and local area data requirements and availability for economic studies in urban planning and development in Pennsylvania.<sup>2</sup> Attention was focused upon three critical categories of information: population, employment, and personal income. Recommendations were presented concerning improvements and changes in the statistics available in these three classifications.

This third study discusses selected frameworks and methods of analysis which appear to be particularly promising in connection with public policy formulation and evaluation and for improvement of decision-making in urban economic planning and development. Discussion in this paper is limited to regional accounting systems, benefit-cost analysis and statistical decision theory. Obviously, a multiplicity of other techniques and analytical frameworks are pertinent and useful regarding the above-mentioned purposes. The topics chosen for discussion here reflect an interest in the improvement of analysis and decision-making at various governmental and private levels. Sets of regional economic accounts are descriptive of the major structural and operational elements of regional economies. They present comprehensive measures of economic activity and welfare and thus may be used for the projection and analysis of changes in these regional economies. Regional economic accounts, such as proposed in this study, would facilitate the study of the implications and outcomes of alternative governmental programs and policies. In particular, they would enable analysis of specific regional impacts in economic terms and the observation of secondary effects which would be expected to occur in other regions of the Commonwealth. Benefit-cost analysis combined with modern statistical decision

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<sup>1</sup>M. Hamburg, Economic Base Studies for Urban Economic Planning and Development in Pennsylvania, Department of Internal Affairs, Commonwealth of Pennsylvania, April, 1962.

<sup>2</sup>M. Hamburg and J. H. Norton, An Evaluation of Selected Data Requirements and Availability for Urban Economic Planning and Development in Pennsylvania, Department of Internal Affairs, Commonwealth of Pennsylvania, December, 1963.



theory, is mainly concerned with the optimization of decision-making in the context of projects carried out primarily within the government investment sector. The common thread running through the discussion in this paper is the attempt to provide decision-making aids, particularly as regards the observing and analysis of the outcomes of alternative policies and courses of action.

As in the previous two studies in this series, the authors would again like to express their appreciation to the many individuals and agencies that have furnished assistance in the carrying out of this project. Although no attempt is made here to acknowledge by name these numerous persons and organizations, our gratitude is none the less sincere and our indebtedness none the less profound. A few brief recognitions, however, are given below of benefits received. Our thanks again are given to the Department of Internal Affairs for the financial support of the project. Kenneth Masters, Director of the Bureau of Statistics of that Department was particularly helpful at the inception of the project. Emmett Welch, the present Director, good-naturedly and competently lent his expert knowledge, insight and criticism to the project, particularly in the detailed and time consuming second study. Special mention must be made of the unselfish expenditure of time and effort made by David F. Bramhall in his valuable review and critique of an early draft of the section on regional economic accounts in this third study. The debt of the authors to Charles L. Leven, Roland N. McKean, Nathaniel Lichfield, Julius Margolis, Howard Raiffa and Robert Schlaifer for their pioneering work in regional economic accounts, benefit-cost analysis and statistical decision theory will be apparent to readers familiar with their work. Finally, we gratefully acknowledge the top-notch, intelligent and devoted secretarial and typing work of Mrs. Sylvia Balis. To state the obvious, all errors of omission and commission remain the exclusive property of the authors.

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Wharton School of Finance and Commerce  
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December, 1963

## TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
Introduction .....	1
1. A Regional Economic Accounting System .....	4
National Income Accounting .....	5
Regions .....	9
Categories for the Production of Goods and Services .....	11
Production of Goods and Services for Export ....	11
Production of Goods and Services for Non-Local Government .....	12
Production of Goods and Services for Regional Capital Formation .....	13
Production of Goods and Services for Regional Consumption .....	13
Rest of the World Account .....	15
Rest of Pennsylvania .....	16
Rest of the United States .....	24
International .....	25
Domestic Sector Account .....	27
Gross Regional Product Account .....	29
Data for Regional Accounts .....	31
Conclusion .....	35
2. Benefit-Cost Analysis and Statistical Decision Theory .....	36
Benefit-Cost Analysis .....	37
Criteria of Choice .....	38
Measurement Problems .....	39
The Requirements Approach .....	40
Suboptimization .....	41
Other Benefit-Cost Analysis Issues .....	42
Tangible and Intangible Effects .....	42
Time Streams of Gains and Costs .....	44
Planning Horizons and Uncertainty .....	46

<u>Section</u>	<u>Page</u>
Benefit-Cost Studies .....	49
Redevelopment Studies .....	49
A Site Location Study .....	53
Statistical Decision Theory .....	58
A Hypothetical Example .....	58
Combination with Benefit-Cost Analysis .....	61
Incorporation of Additional Information .....	62
Conclusion .....	65



## TABLES

	<u>Page</u>
1. Rest of the World Account .....	17
2. Workers Commuting Outside County of Residence, Pennsylvania .....	21
3. Regional Capital Formation and Regional Consumption Accounts .....	28
4. Gross Regional Product Account .....	30

# SELECTED METHODS OF ANALYSIS FOR URBAN ECONOMIC PLANNING AND DEVELOPMENT IN PENNSYLVANIA: COMMENTARY ON REGIONAL ECONOMIC ACCOUNTING SYSTEMS, BENEFIT-COST ANALYSIS AND STATISTICAL DECISION THEORY

## INTRODUCTION

This paper presents a discussion of selected frameworks and methods of analysis useful in connection with urban economic planning and development. The study is divided into two sections, one dealing with a suggested regional economic accounting system for Pennsylvania, the second with a combination of benefit-cost analysis and modern statistical decision theory as a formal method of analysis for the appraisal of governmental investment projects.

In recent years there has been increasing recognition of the urgent need for systematic frameworks of analysis for public policy formation and evaluation and for better decision making techniques at subnational levels, particularly in urban regions and local areas. Since the virtual indispensability of national economic accounts for such purposes at national levels is universally acknowledged, and since there has been an explosion of private and public problems connected with recent urban regional development, the recognition of the potential utility of regional economic accounting systems is a very logical phenomenon.

The first section of this paper attempts to construct a system of regional economic accounts for the Commonwealth of Pennsylvania. A possible analytical and spatial framework for such a system is suggested. No attempt is made at a definitive detailed description of the required set of accounts or data requirements. However, it is felt that enough of the overall framework of analysis is presented to suggest the tremendous usefulness of such a system. The conceptual rubric for the suggested regional accounts is a modification of the national income and product accounts structure. Emphasis is upon a consistent, double entry accounting framework clearly depicting the interaction of the sectors of the economy and the interdependence of the regional economy and the "Rest of the World." Just as the national accounts have made it possible to analyze the national economy and to produce reliable and consistent forecasts of economic activity, so may regional activity be critically examined. Since the suggested framework explicitly recognizes regional interactions, it provides an excellent opportunity to scrutinize the economy of Pennsylvania, and the inter-relationships of the State's diverse economic regions. The accounts provide not only a current status report of the economic welfare of the region, but also furnish a model framework within which to forecast trends and to trace the implications of alternative policies and programs.

In line with the central theme of this series of three studies, it is essential to recognize the current inadequacy of regional information available for public and private decision making. The comprehensive and integrated system provided by regional economic accounts could

provide a firm basis for the coordination of the activities of a wide variety of federal, State and local statistical agencies. Clearly, many of the statistics required to implement a full blown system of regional accounts for Pennsylvania are simply not currently available. Several areas of the State are concerning themselves with the need for metropolitan regional data information services. This study makes no attempt to determine whether regional information should be centrally developed by the Commonwealth of Pennsylvania or whether the State should move in the direction of trying to coordinate the activities of independent regionally operated agencies. The crucial point is to perceive the necessity for the provision of regional information within a consistent analytical framework, and consequently the opportunity offered by a system of regional accounts.

The chaotic state of local and regional information available for private and public decision making purposes was recently indicated in a comprehensive study of the situation in a large metropolitan area including the five southeastern counties of Pennsylvania.<sup>1</sup> Two points dominated the findings: first, that there exists a great lack of coordination and comparability in the collection and distribution of statistical information; secondly and more importantly, that the overwhelming need of both public and private decision-makers is not for more data but rather for a comprehensive framework within which to analyze statistical data. It is primarily in recognition of this latter need and in an attempt to present a model which can deal with the realities of regional interdependence and interaction that the concept of regional accounts is developed here for the Commonwealth of Pennsylvania.

The second section of this paper deals with two promising analytical techniques for the improvement of urban economic decision-making particularly as regards the appraisal of governmental investment projects, namely, benefit cost analysis and modern statistical decision theory. The two techniques may be used separately or in combination. This paper suggests a method of combining the two procedures and advocates an increase in awareness and utilization of these techniques by analysts in the fields of urban planning and development. Augmented experimentation with the use of these techniques would appear to be particularly pertinent in areas such as capital expenditures decision-making by local urban governmental bodies. Benefit-cost analysis attempts to assess the consequences of alternative courses of actions or programs in terms of the benefits and costs which flow from these actions or programs. The desirability or merits of alternative projects are scrutinized in terms of these benefits

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<sup>1</sup>"An Area Data Service Feasibility Study" prepared by a research staff of the Wharton School of Finance and Commerce, University of Pennsylvania for the Pennsylvania-New Jersey-Delaware Metropolitan Project, Inc. (Penjerdel), August, 1962. Final results of this study have not been released at this time. However, a general summary of results has been given in an article by Wroe Alderson and Stanley Shapiro entitled, "A Metropolitan Data Bank for the Business Community," which appeared in Business Horizons, Vol. 6, No. 2, Summer, 1963, pp. 53-62.



and costs. The goal of the analysis ordinarily is to rationalize decision making by providing rankings of projects or alternative courses of action according to the extent to which it is expected that these projects or courses of action will attain realization of combinations of desirable objectives. Since, in public investment decision problems, benefits and costs fall on a large number of different groups, these positive gains and negative results can be analyzed in terms of the individuals and groups who bring about services flowing from the project concerned ("producers"), and individuals and groups who use these services ("consumers"). Some pioneering studies of benefit-cost analysis in urban decision-making contexts are examined.

Modern statistical decision theory is a body of techniques which seeks to make optimal choices among alternative courses of action, while explicitly taking into account the uncertainties of possible outcomes. An expository illustration is given in this paper of the use of this theory in a problem in the field of urban redevelopment. Suggestions are given concerning the potential combinations of benefit-cost analysis and statistical decision theory for urban decision-making problems.

It is recognized that the technical methods presented in this paper for the purpose of the improvement of public and private decisions are but one level of approach to decision-making in an urban environment. Forces of public administration and organizational structure can, of course, be critical in practical decision-making. The authors of this paper firmly believe, however, that the major justification for the frameworks and methods of analysis presented in this paper is that public and private decision-making can be substantially improved through the use of such logical constructs.

## 1. A REGIONAL ECONOMIC ACCOUNTING SYSTEM

Thus it happens in matters of state; for knowing afar off (which it is only given to a prudent man to do) the evils that are brewing, they are easily cured. But when, for want of knowledge, they are allowed to grow so that every one can recognize them, there is no longer any remedy to be found.

Niccolo Machiavelli  
The Prince, Chapter III

Although Machiavelli may not have had in mind present-day economic "evils", it is none the less prudent to be aware of them and recognize their consequences. The ability to foresee future levels of economic activity has been a continuing goal of analysts. Numerous methods of national and regional economic analysis have been proposed in recent years, each emphasizing specific goals or activities. These methods have tended to suffer from the very nature of their heterogeneity and specific applicability, often permitting the advocacy of contradictory, or at least partially incompatible, policies. Wage policies have sometimes been inconsistent with price policies, tariff policies have sometimes countered stated objectives of foreign aid policy, and tax policies have sometimes been found to contradict full employment policies. These inconsistencies usually occur not between principal, direct effects of the two policies, but rather between the principal objectives of the one, and the unintended secondary repercussions of the other. Primary effects of a policy can often be fully anticipated, even without the assistance of complicated economic models. Secondary and tertiary effects are not so easily foreseen. Often the mutual inconsistencies of two seemingly independent policy decisions are only revealed by tracing out these secondary and tertiary repercussions. Special purpose models with their intentional neglect of side effects are most unsuited for the aforementioned type of analysis. The task must be accomplished within a dynamic framework which stresses interdependence and interaction among the many elements in the economy. Regional economic accounts provide such a framework. In this paper, a system of regional economic accounts is proposed for the Commonwealth of Pennsylvania. These accounts stress the interdependence of the regions within the State economy as well as the interaction of the various sectors within each regional economy.

The first section of this paper describes a potential system of regional accounts for the Commonwealth of Pennsylvania. The major purpose in setting forth this system is to provide insight into the analytic and decision-making aids furnished by such systems of accounts. The construction of a detailed set of accounts is not undertaken at this time, but rather a discussion is given of the framework and some of the associated problems of a regional accounting system.

## National Income Accounting

Formal economic accounting frameworks even at the national level represent a relatively recent development. The concept of economic accounts may be traced back in history,<sup>1</sup> but it is only in recent decades that accounting frameworks have emerged as operational systems of data presentation and analysis. National income accounting in the United States began in 1932 when the U. S. Senate requested the Department of Commerce in cooperation with the National Bureau of Economic Research to prepare estimates of the national income.

National income accounting has become an integral part of the economic information system. Data provided by the accounts are followed closely by both public and private decision-makers. Although there might not always be complete agreement on the interpretation of the data, policies can be formulated and decisions can be reached in the light of current data within a consistent analytic framework. "Try to conceive of the making of national policy without the use of the national economic accounts and the analysis based upon them, together with the related information, by the Council of Economic Advisors and other public units." Or for that matter... "consider the extent to which business enterprises would be handicapped, particularly in making long range investment plans and marketing arrangements, if they could not rely on the regular provision of national accounts and data provided by the Bureau of the Census, Department of Labor, and others... Such an eventuality was colorfully summed up by a member of the Council of Economic Advisors when he was asked about the use made of the national accounts: 'Without these accounts we would still be looking at the million and one bits and pieces of data on items like retail sales, bank deposits, and carloadings - very much like the medicine man looking at the entrails of a chicken'."<sup>2</sup>

At present there are basically five forms of national economic accounts:

1. national income and product accounts
2. input-output accounts
3. flow of funds accounts
4. balance of payments accounts
5. national balance sheets

Although each form has its specific function describing various aspects

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<sup>1</sup>One of the earliest developments of national income as a flow of goods and services was developed by J. J. L. Graslin in 1767. See "Essai Analytique sur la Richesse et sur l'Impot" as cited by J. A. Schumpeter in History of Economic Analysis, Oxford University Press, New York, 1954.

<sup>2</sup>Harvey S. Perloff, "A National System of Metropolitan Information and Analysis" American Economic Review, Vol. LII, No. 2, May 1962, p. 360.



of the national economy, only the national income and product accounting framework will be discussed here as it bears the closest resemblance to the suggested regional economic accounts.<sup>1</sup>

There are three basic ways of viewing national income and calculating its magnitude. These differing views may be obtained by observing the circular flow of goods, services, and payments in the economy at different stages.

The first way of measuring national income has been termed the "total value of production" or "goods flow" method, which involves adding together the value added of all production enterprises in the economy for a given period.<sup>2</sup> This approach might also be called an "industry" method as it represents the sum of the value added by each industry or sector of the economy, and is usually presented in that form.

A second method has been designated as the "expenditures" approach, which consists of measuring the total expenditures on final production in the period by all who make purchases in the economy. The third method involves the measurement of the "incomes" or "payments" received in the form of wages and salaries, interest, dividends, rents, etc., both monetary and in kind, by the people of the country.

There are four basic measures or concepts of national income in current use. Each concept specifies a distinctive aspect of the economic system and may be measured in different ways.

Gross National Product: The most fundamental measure of the productive activity of the national economy is the Gross National Product (GNP). The GNP figure represents the gross value at market prices of the final products turned out of the entire economy during the specified period. There are two points which are important in this definition; first, that GNP calculations exclude all intermediate goods, eliminating double counting; and second, that they include replacement investment, that is, the part of the total value of newly produced capital goods which represents the replacement of worn-out capital equipment.

Viewing GNP as expenditures, it is clear that total purchases might be divided into representative sectors. These sectors are gen-

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<sup>1</sup>For a comprehensive discussion see Richard and Nancy Ruggles, National Income Accounts and Income Analysis, 2nd edition, McGraw Hill Book Company, New York, 1956.

<sup>2</sup>"Value added" by an industry is the difference between the value of the goods or services produced by the industry and the value of the materials, fuel, power, and contract work purchased from other industries, that is, it is the "value" imparted to the good or service through the production process. The value added for an industry consists primarily of payroll, profit, taxes, depreciation, advertising, and interest expenses.

erally identified as: personal domestic consumption (C); private domestic investment (I); government purchases of goods and services (G); and the net export of goods and services, which is represented as exports (e) less imports (m). Thus the calculation of the gross national product, by sectors, may be presented as:  $C + I + G + (e - m) = \text{GNP}$ .

Net National Product: As the prefix "net" suggests, the concept of net national product is arrived at by a deduction from gross national product. The deduction is the amount representing the value of capital consumed or "depreciated". This is similar to specifying that the investment involved is net investment, that is, gross investment (I) less replacement investment. Despite the controversial discussions of the operational definitions of capital consumption, the concept of net national product (NNP) has the advantage of clarifying the net increase in total production over and above current capital consumption and replacement investment. NNP stresses the long run importance of maintaining and improving the physical productivity of capital for economic growth.

National Income: Thus far, the national income measures have been examined from the "production" and "sectors" aspects; national income (NI) is viewed most commonly from the "income" or "payments" concept. NI is equal to the sum of all of the wages, salaries, profits, rents, interests, etc. paid out to the consumers or income recipients - in short, it is the sum of all the "factor incomes" received by the factors of production in a given period. It is also noted that the sum of these factor incomes equals the net national product calculated at factor costs; that is, an NNP value calculated in terms of the costs incurred by the producers in aggregate for using the specific factors of production. This relationship of NNP and NI may be further used to calculate national income in a second manner. Starting with NNP at market prices, the following items are deducted: (1), indirect taxes, e.g., federal excise taxes and selected producer sales taxes; (2), business transfer payments, e.g., business contributions to non-profit organizations, schools, charities, etc.; (3) the accounting profits from government operated enterprises, but, government subsidies paid to private business, such as those presently paid to ship-builders, airlines, and farmers are added. Thus:  $\text{NNP (at factor costs)} = \text{NNP (at market prices)} - (\text{indirect taxes} + \text{business transfers} + \text{government profits}) + (\text{government subsidies}) = \text{NI}$ .

Personal Income: The economic potential of individuals as consumers, when viewed collectively, may be represented by the concept of Personal Income (PI). Personal Income is derived from National Income by subtracting from the latter all of the items which fail to reach the individual; such as, undistributed corporate profits, corporate income taxes, and social insurance contributions. Business and government transfer payments to individuals must be added.

The breakdown of national income estimates into significant divisions and factors has given rise to the term "social accounting." Social accounts are designed to bring into sharp focus the impact upon the economy and the nation of changes in the level and composition of the expenditures undertaken by various sectors of the economy. These

accounts provide the framework for analysis of the interdependence and interaction of producers, consumers, government, and the foreign sectors of the economy and further provide insight and data required for making long term projections of economic activity. The application of the concepts of these accounts to the regional economy is the main interest of the first section of this paper.



## Regions

A "region" is not an actual, distinctive, physical entity which exists merely waiting to be discovered - its definition depends upon the purpose of investigation. At any given time, the exact spatial configuration of a region will depend upon the criteria employed in defining it; and thus for the most part, upon the specific needs of the study.

Although each discipline has utilized its own special definition, certain common attributes appear: (1) the term 'region' generally refers to a differentiated segment of land, that is, regions are areas which can be distinguished from other areas; (2), a region is composed invariably of elements which are geographically contiguous; (3), a region usually possesses some degree of internal cohesion, that is, it is unified by a combination of similar characteristics or by a combination of diverse elements which are complementary; (4), a region is often characterized by a degree of cohesive social organization; (5), a region often possesses a unified and identifiable economic base, that is, it has a functioning combination of natural and man-made resources, technology, and economic institutions; and finally, (6), a region is very often considered to be an area within which it is possible to function effectively in meeting certain social, economic, and political needs of the residents.<sup>1</sup>

The above characteristics and criteria should be observed when partitioning the Commonwealth of Pennsylvania into regions for purposes of economic accounts. Because of the data requirements of the regional accounting framework it would appear that the number of regions established for Pennsylvania should not be less than four nor more than eight. The exact number and boundaries should be the result of careful study, utilizing many social, political, and economic criteria.

The partitioning should be made with respect to county divisions and should utilize the twelve existing Standard Metropolitan Statistical Areas as starting points. Maintaining these boundaries, that is, partitioning in such a manner as not to divide a county or a SMSA, tends to preserve statistical comparability with other series and permits a wider diversity of uses of the data.

The areal definitions should also take cognizance of existing regional structures which have undertaken planning, development, or analytical studies on a wide area basis. Although the areas which are utilized by these organizations may be considered too limited in scope for the economic regions needed in these accounts, the great amounts of data which have been gathered by these agencies should not be ignored. Similarly, there exist in various parts of the State rudimentary plans for

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<sup>1</sup>"The Setting for Regional Planning in New Jersey," Department of Conservation and Economic Development, Division of State and Regional Planning, Trenton, N. J., 1961, pp. 15-25.

the development of metropolitan data agencies, designed to provide regional information to public and private organizations. Such undertakings could both contribute to and gain greatly from joint participation in the development of regional social accounts.

In no small measure, the effectiveness of the regional social accounts for the State will depend upon the effective partitioning of the area into regions. Care and time spent in adequately designing the regional boundaries will pay off many-fold in terms of ability to analyze and relate data from the accounts.

## Categories for the Production of Goods and Services

The major decision which has to be made in the construction of income and product accounts is that of the division of the production of goods and services into distinct categories for analysis. The major impact of the account analysis is brought about by the delineation of those sectors or activities of the economy which are determined by exogenous forces or elements as opposed to those which are endogenously determined.

### Production of Goods and Services for Export

The production of goods and services for export has typically been considered the most important activity within a small regional economy. This is the major method by which a region may earn exchange credit with the rest of the world to purchase the goods or services which it does not produce. The term "export" is defined for purposes of these accounts as all of the activity going into the production of goods and services which are:

- (1) shipped directly outside the region.
- (2) sold to other regional producers for further processing before being shipped directly out of the region.
- (3) sold to individuals who come into the region to purchase them.
- (4) sold to individuals residing within institutions located inside the region.

The inclusion of the first of these items in the export classification is obvious and consists of the value added by regional firms to all goods and services which are sold directly to purchasers outside the region.

The second item, the inclusion of intermediate goods to be used by regional producers in export activities, may appear somewhat more difficult to follow. It would be clearly unwise to neglect this sector of export production, as in many cases the impact of the export market may be clearly identified in the production activities of intermediate goods. This classification might logically be extended ad infinitum by noting that in the final analysis with the exception of large, theoretically self sufficient regions, almost all production activity is inter-related and ultimately dependent upon regional exports. This inter-industry inter-relationship effect may be more clearly shown through a modified form of input-output analysis which will be discussed later.

The third component of the export sales sector is composed of those sales made within the region to people or institutions who reside outside the region, but who come into the region to purchase these goods



or services. This component is important in the analysis of retail trade. To classify all sales made within the region as domestic or local sales would be clearly misleading, and in the case of specific areas within the Commonwealth of Pennsylvania where tourism is responsible for a relatively large segment of the economic activity, such classification would defeat the analytic purposes of the system.

The final item in the export classification is composed of those sales made to persons residing in institutions, to non-resident students, and to military personnel, all located inside the region. The basis for this classification is twofold. Primarily these individuals represent exogenous elements within the regional economy, and should be treated as such. The second reason for including these individuals in the export sector is the simplification gained in the treatment of statistical data. If these people were to be regarded as regional residents, adjustments would have to be made in population data, and difficult estimates would be required to determine the contribution of these groups to regional income. In general, the average income of these groups is relatively low, and would produce a misleading effect upon the level of regional income per capita. This effect would tend to indicate that these individuals were a social liability to the region, when in fact, the opposite may be true.

#### Production of Goods and Services for Non-Local Government

The production of goods and services for non-local government is an important and growing sector of many regional economies. The treatment of the non-local government sector varies widely in social account literature. The tendency has been toward a separate treatment of the governmental sector as opposed to inclusion with the export sector.

Non-local or non-regional government will be defined as all establishments of the State or Federal government, joint and inter-governmental agencies, and other non-locally administered organizations, whether or not the organization is physically headquartered within the region. Non-local government will also include those regional, county, and municipal governments which are outside the region.

Local or regional governments, i.e., county; and municipal governments within the region, will be considered as local or regional consumers, except for their capital expenditures, and will be discussed in later sections. Although a specific region may contribute heavily to the fiscal operation of the State government, or be the seat of such government, it is anticipated that the actual decisions and policies of the government are exogenous elements to the economic activity of the separate regions.

With the increasing role of non-regional government in the day-to-day activities of every sector of the economy, careful analysis of this sector as an independent, exogenous, element is imperative. Although the data for some of this section of the accounts may prove

difficult to obtain, the addition of this sector to the analytic framework of accounts greatly increases their value in decision-making and policy formulation.

### Production of Goods and Services for Regional Capital Formation

The production of goods and services which are not exported may be divided into two classifications - those consumed, and those which may be considered to be invested, i.e., capital formation. Somewhat similar to the definition used in the U. S. national income accounts, capital formation expenditures will be considered as all business purchases of plant and equipment, and all personal outlays by residents for construction. The addition is suggested in these accounts of the capital formation of regional (local) governments. Although production for local government is customarily allocated in its entirety to the consumption account, it is felt that for the purposes of regional analysis, particularly by governmental agencies, it would be advantageous to indicate the significant magnitude of capital investment undertaken by the regional governments.

Regional governments abound in number and in jurisdiction; counties, cities, townships, boroughs, school districts, fire districts, planning regions, and a multitude of other units are a part of the local governmental picture. Each of these units has its staff, office space, revenue, administrative expenses, and in many cases, capital expenditures. The value and growth of the capital formation of these governmental units is of increasing importance in the economy.

There are obviously many expenditures which may be classed as capital expenditures by individuals, business, or government in addition to those included in the above definition. At present, however, it is not possible to estimate these additional expenditures with any reasonable degree of accuracy. It is felt, therefore, that errors arising from ignoring these additional items, when contrasted with the errors associated with their inclusion, will not significantly affect the analytical capabilities of the accounts with regard to policy formation or decision making.

### Production of Goods and Services for Regional Consumption

Production which has not been allocated either directly or indirectly into exports, non-regional government, or regional capital formation is represented as regional consumption. This category differs in content from that of the national accounts in the significant inclusion of regional (local) government as a consumer - except as noted above for capital formation. The inclusion of regional governments is predicated on the concept that local government expenditures (except for capital expenditures) are controlled and motivated by internal forces.<sup>1</sup> Regional

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<sup>1</sup>This is not to say that capital expenditures of local governments may

governments tend to operate closer to a current accounting period than non-regional government, and there seems to be a tendency for non-capital expenditures of regional governments to be correlated with regional economic activity. Ultimately, local government may be considered as serving the people, the consumers, of the region; thus, a complicated allocation of local government expenditures for non-capital items between final services for regional consumption and intermediate services to business can be avoided by a single allocation to the regional consumption sector. This allocation also avoids the very difficult concept of value-added in government services. The merits of imputing value to the administrative services of a government have been long discussed, and it is felt here that any attempts to include such adjusted data within this framework could only serve to complicate the analysis without significantly adding to the analytical capabilities of the accounts.

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(Footnote continued)

not be locally controlled or motivated, but rather that in view of the number and importance of "aid" programs, the timing and size of expenditures may not reflect local consumption patterns.



## Rest of the World Account

In the national income and product accounts which record the total economic production of the nation, emphasis is placed upon the domestic sectors of the economy. The rest of the world's relations with the national economy may be summed up in a single item "net foreign investment." Although recent monetary problems of the United States have heightened interest in the "foreign" sector of the economy, no detailed treatment of that sector has been made in the national accounts similar to that which is attempted at the regional accounts level.

In 1957, the net foreign investment of the United States amounted to \$3.5 billion or less than one percent of the Gross National Product for that year.<sup>1</sup> In the income and product accounts for the Elgin-Dundee area, Kane County, Illinois, as constructed by Dr. Leven for 1956, the net investment of the region in the rest of the world was calculated at \$87.0 million or 63.7 percent of the Gross Regional Product. The accounts developed by the same author for the Sioux City, Iowa area in 1958 indicate that the net investment in the private sector of the rest of the world, plus the net contribution of the region to non-local government was \$51.3 million or 25.3 percent of the Gross Regional Product.<sup>2</sup> Thus, the "foreign" sector of local and regional social accounts is apt to be relatively more important than in the national accounts.

The regional economy is greatly influenced by its relations with the rest of the world. This relationship is dynamically illustrated in regional accounting frameworks. The "Rest of the World" account as described in this paper is broken into three distinct segments for both clarity of presentation and analysis of the available data. The total coverage of the entire account may be defined as the relationship of the regional economy with all other economic systems. The natural divisions of the accounts may be designated as the relationships of the region with: (1) other regions within the Commonwealth of Pennsylvania; (2) the other 49 states in the "Rest of the United States"; and, (3) the foreign economies in the rest of the world. Thence, in aggregate, these divisions constitute the "Rest of the World." (See Table 1).

The designation of "other regions within the State" has been made for various reasons. This division will permit the construction of accounts for the entire state without too much additional data, and will aid in policy formulation and decision-making with regard to inter-regional impacts within the State. This division also permits an important self-

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<sup>1</sup> U. S. Income and Output: A Supplement to the Survey of Current Business, United States Department of Commerce, (Washington: U. S. Government Printing Office, 1958), Table I, p. 114.

<sup>2</sup> Charles L. Leven, "Regional Income and Product Accounts: Construction and Applications" in Design of Regional Accounts, Werner Hochwald, ed. Resources for the Future, Inc., The Johns Hopkins Press, Baltimore, 1961, pp. 188-193.

checking feature of the accounting framework to be utilized more fully, since the first section of the account forms a closed system. An inflow of goods, services, or payments into one region in this section of the account must be balanced by outflows of goods, services, or payments from one or more other regions. Although the inter-relationships of the various regions within the State are not illustrated as clearly in regional accounts as it would be possible to do through inter-regional input-output analysis, the accounts provide more data in other areas which are considered somewhat more important for decision-making purposes.

The second segment of the account describes the relationship of the regional economy to the rest of the United States. Highlighting the activities of the region with respect to the national economy provides insight into many of the exogenous factors affecting the region. Projection of economic activity for the region is greatly facilitated through the use of this breakdown and appropriate national income accounting data.

The remaining segment of the Rest of the World account indicates the relations of the region with foreign economies through international trade and commerce. The relationship of the region to foreign economies has been the central focus of many studies in recent years.<sup>1</sup> These studies have illustrated well the effects upon a regional economy of national policies concerning tariffs, duties, quotas, and other import or export restrictions. Through this segment of the account it is possible to analyze the impact of changes in international trade upon the regional economy, and thus aid in policy formulation.

Each segment of the Rest of the World Account will be analyzed in the following pages in some detail. Reading down the left side of the account indicates how the region "earns its keep" in the economic system.

### Rest of Pennsylvania

(a) Value added in the production of goods and services for export to the rest of Pennsylvania. It is significant that this is the first item to be considered. A major function of regional economies, even relatively large ones, is production for export. This activity is often the central focus of economic analysis and does, in fact, in many cases comprise the basic framework of analysis of the economy. The magnitude and dynamic operation of this portion of the economy determines to a large part the economic survival of the region; it is the sine qua non of regional economics.

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<sup>1</sup>Excellent examples of these studies may be found in: Local Impact of Foreign Trade: A Study in Methods of Local Economic Accounting, National Planning Association, Washington, 1960.

<sup>2</sup>The following segments draw heavily from Charles L. Leven, Theory and Method of Income and Product Accounts for Metropolitan Areas, including the Elgin-Dundee Area as a Case Study. Iowa State University, 1958 as reprinted by the Center for Regional Economic Studies, University of Pittsburgh, Pittsburgh, 1963.

Table 1.

## REST OF THE WORLD ACCOUNT

Rest of Pennsylvania

- (a) Value added in the production of goods and services for export to the rest of Pennsylvania.
- (b) Value added in the production of goods and services for non-regional government within Pennsylvania.
- (c) Excess <sup>1</sup> of out-commuter wages over in-commuter wages for commutation of the region with the rest of Pennsylvania.
- (d) Net receipts of interest, rent, and dividends from the rest of Pennsylvania.
- (e) Excess of gifts received from over gifts given to the rest of Pennsylvania.
- (f) Excess of profits of outside branches of regional firms over profits of regional branches of outside firms which are headquartered elsewhere in Pennsylvania.
- (g) Less: Imports of final and intermediate goods for consumption from the rest of Pennsylvania.
- (h) Less: Imports of final and intermediate goods for capital formation from the rest of Pennsylvania.

Net investment in the private sector of the rest of Pennsylvania.

Net current payments due the region on private account from the Rest of Pennsylvania. (Sum of items (a) through (h) ).

Net private investment in the private sector of the Rest of Pennsylvania.

- (i) Plus: Excess of direct and indirect Pennsylvania tax and non-tax payments over transfer payments from Pennsylvania government.

Plus: Net contribution to Pennsylvania government.

NET CURRENT PAYMENTS DUE THE REGION FROM THE REST OF PENNSYLVANIA. (Sum of items (a) through (i) ).

NET INVESTMENT IN THE REST OF PENNSYLVANIA:

<sup>1</sup> "Excess" in this and other places in these accounts may denote either positive or negative quantities.



## REST OF THE WORLD ACCOUNT (continued)

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Rest of the United States (less Pennsylvania)

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|---|---|
| <p>(a) Value added in the production of goods and services for export to the rest of the United States.</p> <p>(b) Value added in the production of goods and services for government in the rest of the United States.</p> <p>(c) Excess of out-commuter wages over in-commuter wages for commutation with the rest of the United States.</p> <p>(d) Net receipts of interest, rent, and dividends from the rest of the United States.</p> <p>(e) Excess of gifts received from over gifts given to the rest of the United States.</p> <p>(f) Excess of profits of outside branches of local firms over the profits of local branches of outside firms in the rest of the United States.</p> <p>(g) Less: Imports of final and intermediate goods for consumption from the rest of the United States.</p> <p>(h) Less: Imports of final and intermediate goods for capital formation from the rest of the United States.</p> | <p>Net investment in the private sector of the rest of the United States.</p> |
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Net current payments due the region on private account from the rest of the United States. (Sum of items (a) through (h) ).

Net private investment in the private sector of the rest of the United States.

- 
- (i) Plus: Excess of direct and indirect United States non-local and non-state taxes and non-tax payments over transfer payments from United States non-local and non-state government.

Plus: Net contribution to non-local, non-state government.

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NET CURRENT PAYMENTS DUE THE REGION FROM THE REST OF THE UNITED STATES. (Sum of items (a) through (i) ).

NET INVESTMENT IN THE REST OF THE UNITED STATES.

## REST OF THE WORLD ACCOUNT (continued)

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Rest of the World (foreign)

(a)	Value added in the production of goods and services for export to foreign sources.	Net investment in the private sector of foreign sources.
(b)	Net receipts of interest, rent, and dividends from foreign sources.	
(c)	Excess of gifts received from over gifts given to foreign sources.	
(d)	Excess of profits of foreign branches of local firms over profits of local branches of foreign firms.	
(e)	Less: Imports of final and intermediate goods for consumption from foreign sources.	
(f)	Less: Imports of final and intermediate goods for capital formation from foreign sources.	

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Net current payments due the region on private account from foreign sources.  
(Sum of items (a) through (f) ).

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Net private investment in the private sector of the foreign sources.

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(g) Plus: Excess of direct and indirect foreign tax and non-tax payments over transfer payments from foreign governments.

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Plus: Net contribution to foreign government.

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NET CURRENT PAYMENTS DUE THE REGION FROM FOREIGN SOURCES.  
(Sum of items (a) through (g) ).

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NET INVESTMENT IN FOREIGN SOURCES.

The statistical data for developing the magnitudes of export entries may be found in large part within the existing statistical programs of the Commonwealth, and through proposed sample surveys. The development of this latter information source is discussed at later points in this paper.

(b) Value added in the production of goods and services for the government of the Commonwealth of Pennsylvania, and local governments in other regions of the State. This item indicates the importance of the State government as a purchaser of the production of the region. Analysis of the impact of State purchases upon the regional economies will aid in the formulation of policies concerning the allocation of such purchases, with regard to consistent economic goals. In general, data for such an entry should be available through State accounting records, and should be cross-checked through the production allocation matrix.

There are many different ways in which a region may acquire the means of payment for desired goods and services from the rest of the world. Although the production of goods and services for sale to external purchasers is the primary method, and the only one normally treated in economic base analysis, regional income and product accounting considers various other income producing sectors. This coverage of additional income producing activities or flows within the region is one of the important advantages of the accounting framework.

(c) Excess of out-commuter wages over in-commuter wages for commutation with the rest of Pennsylvania. The most obvious source of exchange credit with the rest of the world which is not included in regional production is the inflow of wages and salaries received from outside the region. This inflow represents the commutation of employees who reside within the region and are employed out of the region. There exists an obvious counter-flow, as there are people who live outside the region, but are employed within the region.

Differential partitionings of the State into economic regions would have a considerable effect upon the magnitude of this entry. One of the criteria which might well be utilized in the delineation of the regions would be the minimization of commutation between regions. The 1960 Census of Population has indicated that of total employed workers within the State, 14.6 percent of them worked in counties other than the one within which they resided (See Table 2). It is noted that the commutation proportion for counties within Standard Metropolitan Statistical Areas in Pennsylvania was significantly higher, 15.9%, than for those counties not within the SMSA's, 5.8%.



Table 2

WORKERS COMMUTING OUTSIDE COUNTY OF RESIDENCE  
PENNSYLVANIA

	Total Workers Number <sup>1</sup>	Worked Inside Number	County of Residence % of Total	Worked Outside Number	County of Residence % of Total
STATE	4,051,825	3,288,576	81.2	589,924	14.6
In SMSA's	3,520,072	2,812,778	79.9	559,387	15.9
Outside SMSA's	523,753	475,798	90.9	30,537	5.8
S.M.S.A.'s					
Allentown-Bethlehem-Easton	193,361	155,275	80.3	32,954	17.0
Altoona	45,158	42,268	93.6	1,724	3.8
Erie	85,028	78,775	92.6	1,858	2.2
Harrisburg	134,934	108,154	80.1	22,466	16.5
Johnstown	82,748	72,312	87.4	8,419	10.2
Lancaster	111,439	101,421	91.0	6,359	5.7
Philadelphia	1,651,129	1,188,653	72.0	381,315	23.1
Pittsburgh	813,897	709,503	87.2	69,752	8.6
Reading	114,718	100,706	87.8	10,006	8.7
Scranton	81,926	73,359	89.6	5,280	6.4
Wilkes-Barre - Hazelton	119,366	98,703	82.7	11,025	9.2
York	94,368	83,649	88.7	8,229	8.7

Source: U. S. Bureau of the Census, U. S. CENSUS OF POPULATION: 1960 General Social and Economic Characteristics, PC(1)-40C, U. S. Government Printing Office, Washington, 1962, Tables 63 and 71.

<sup>1</sup> The parts do not add to the total because no allocation was made of the "no response" workers.

(d) Net receipts of interest, rent, and dividends from the rest of Pennsylvania. Non-labor factor payments are represented in this entry. These payments received by regional residents must be included and offset by the counter-flows of interest, rent, and dividends paid by regional residents to entities outside the region.

At this point it must be remembered that payments to non-profit organizations, institutions, and local branches of firms having their main offices outside the region are considered out-payments. Payments between residents and regional firms are considered domestic payments and are not considered in this account. Payments of dividends pose a difficult problem. They may be received by three basic groups within the region; (1) individuals, (2) businesses, and (3) institutions. Only those being paid to local individuals and local firms with main offices within the region need be considered as inflows. The corresponding outflow would consist of payments by regional firms to individuals, firms, or institutions in the rest of Pennsylvania.

An additional item of non-labor factor payment, not included above, is non-resident proprietary earnings. It is assumed that the net flow of such earnings may be considered zero.

Statistical information with regard to the net flows of interest, rent, and dividends may be obtained from the proposed sample survey of individuals, and through the corresponding survey of business establishments. These data may be cross-checked in aggregate with information from the U. S. Department of Commerce personal income estimates relating to such payments, as well as tax return data from the Internal Revenue Service. Benchmark data might also be obtained from the federal decennial censuses.

(e) Excess of gifts received from over gifts given to the rest of Pennsylvania. This item covers income payments received and paid abroad other than those considered as factor payments for production. Included in this classification are gifts, prizes, awards, pensions, and other compensation payments from non-governmental sources.

Pensions and other compensation payments made to individuals by business enterprises are a difficult segment of this item. There is considerable difficulty in obtaining reasonable estimates of the proportion of business pensions which represent employee purchased annuities and that portion which represent direct business funds. This difficulty is compounded in the distribution of such payments among the regions of the State and the areas outside the State. Such data may be estimated only through a sampling survey of both individuals and business establishments.

Inter-regional transfer of personal gifts may appear as a significant source of income to individuals in some regions. Economically depressed regions of the State are anticipated to have considerable inflows of such personal gifts.

(f) Excess of profits of outside branches of regional firms over the profits of regional branches of firms' headquarters within other regions in Pennsylvania. This final item of exchange credit to the region has many facets and may be treated in various manners. Dividends paid by business firms have been covered in the previous item (d), leaving profits which are undistributed, i.e., retained earnings to be allocated through this entry.

One distinct possibility would be to distribute these undistributed profits according to the geographic distribution of stockholders, since they are the legal owners of such funds. It is obvious, however, that most corporations never intend to distribute these profits, but rather to reinvest them in the enterprise. This would tend to suggest that an ideal distribution of these funds would be with regard to the undefined areas of future investment. It is clearly not feasible to make such a distribution. A method of allocation which has been used in some account studies completed to date has been to treat all profits which are retained as residing in the main office of the corporation. The justification of this allocation is that the main office is the locus of decision-making power with respect to these funds.

An additional method of allocation which has been suggested is the establishment of a theoretical or dummy region to act as a repository for the retained earnings of those corporations operating within the Commonwealth. These funds, thus isolated in a dummy region which is unrelated to any actual geographic region, may then be analyzed and developed more fully in the light of various policy alternatives.

Although either of the latter two methods of allocation would certainly be easier with respect to statistical allocation, it will result, in some important instances, in a significant distortion of the economic activity of some regions. An alternative method which does not result in such severe distortions, but which does have certain inequities, is to allocate retained profits with respect to the level of sales activity or total employment within each region. This method implicitly assumes that the enterprise will continue its present geographic distribution of investment. Such an assumption may not cause significant distortion in most industries. However, there are some industries in the State which have been undergoing significant changes in patterns of investment.

Regional distribution of corporate retained earnings and dividends must also include allocation of corporate income tax payments to both State and Federal governments. This information may be obtained from tax levying agencies, as well as from existing statistical series collected by the Pennsylvania Departments of Internal Affairs, and Labor and Industry.

(g) and (h) Imports of final and intermediate goods and services for consumption and capital formation, from the rest of Pennsylvania. These items, offsetting the exchange credit of the region with the rest



of Pennsylvania, are very important as they represent the inflow of goods and services to the region. The system of social accounts, by means of its multiple entry methods, and the segmentation of this account, provides a relatively easy method of determining imports to the region. It is clear that when we are concerned with only the interaction of regions within the State, as in this segment of the account, the exports of one region to another must appear as imports in the accounts of the other region. Thus a self-checking procedure is possible for this section of the accounts.

A determination of import totals may also be made through the double entry feature of these accounts. Regional purchases of goods and services either for consumption or capital formation, less value added in the regional production of goods and services in those categories is equal to regional imports of final and intermediate goods and services for consumption or capital formation. The framework for this calculation is discussed in the section dealing with local accounts of Regional Capital Formation and Regional Consumption.

(i) Excess of direct and indirect tax and non-tax payments to Pennsylvania government over transfer payments made to the region by Pennsylvania government. The magnitude of direct and indirect tax and non-tax payments made by a region to the local governments of other regions, although theoretically to be included within this entry, may be considered so small that for purposes of calculation they may be netted out by assuming equal transfer payments to the region from those non-regional local governments. Regional payments of taxes and non-tax payments are increasing in most sectors, and transfer payments by the State government represent an important segment of some regional economies. The relationship of regional inflows and outflows to the State government should be considered in policy decisions with regard to taxation. The analysis of these payments and the impact of State expenditures upon regional economies will provide a meaningful form of evaluation for alternative policies and decisions by the State.

The statistical information necessary for determination of the payment flows should be forthcoming from the accounting records of the various State agencies. Such records should make available a relatively easy allocation of receipts and expenditures by regions.

The second and third segments of the Rest of the World Account are similar in form to the first segment developed above. Significant differences brought about by changes in geographic areas covered will be highlighted in the following discussion.

#### Rest of the United States

This segment of the account exhibits many of the same characteristics found in the first segment. As expected, however, there are important differences arising from industries whose markets tend to be national rather than regional in scope. The industrial make-up of the region will determine the emphasis as to which segment will have the

greatest magnitude; regional within the State, national, or international.

For most regions, the level of commutation of employees between the region and States other than Pennsylvania would be expected to be less than interregional commutation within Pennsylvania. An exception to this might be the Philadelphia area, where significant inter-state commutation takes place between Philadelphia and the surrounding labor market area in New Jersey.

Information concerning non-labor factor payments with the rest of the United States will have to be developed from existing tax statistics and personal income estimates made independently.

Treatment of the retained earnings of multi-establishment firms operating both within the region and outside the State would merely require an extension of the prior method. It should be noted however that this segment would not have the self-checking characteristics of a closed system, which limits to some degree the accuracy of the resulting data.

Direct and indirect tax and non-tax payments to the Federal government and other State governments constitute another rapidly growing segment of the economic activity of all regions. Payments to other States and non-Pennsylvania local governments by individuals within a region may be considered equal to payments of others to Pennsylvania and regional governments, thus eliminating that payment balance. Federal tax payments by regional individuals and business firms may be obtained through the statistical data of the Internal Revenue Service, and other agencies. Transfer payments by the various government agencies to the residents of the region may be obtained through a careful audit of the reports of the many agencies, and checked through the sample survey interviews.

### International

This final segment of the Rest of the World account is the one which has received the greatest emphasis in non-account studies. Although this segment is generally the smallest in the regional account, and one which is least likely to be influenced by local decisions, it represents the influence of external elements upon the regional economy. This segment illustrates vividly the effects of international trade policies upon the economic activity of the region.

The major items in this segment consist of flows of goods into and out of the region through foreign trade. Relevant data are presently available from the U. S. Department of Commerce and special information collected by the Pennsylvania Department of Internal Affairs.<sup>1</sup>

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<sup>1</sup>Statistics have been recently published by the Pennsylvania Department of Internal Affairs in two releases: "Exports by Pennsylvania Manufacturing Establishments: 1961" (FT-61) March 1963; and Directory of Pennsylvania Manufacturing Exporters: 1963, June 1963.

The summation of each of the segments of the account develops Net Investment in the Rest of the World. The segments indicate the distribution of this regional investment with respect to geographic levels; state, national, international.

Net investment, the balancing item or residual of the account, which appears in each segment and is aggregated over all geographic levels, may be either positive or negative. Interpretation of this regional investment in the Rest of the World must be approached with extreme caution. As is the case with the national accounts, it becomes most difficult, and perhaps impossible, to trace out the detailed effects upon the regional economy of an increase in the net investment of the region in the rest of the world. An increase in the regional investment could come about by:

1. an increase in the indebtedness of outsiders to regional residents.
2. a decrease in the indebtedness of regional residents to outsiders.
3. an increase in regional residents' foreign balances.
4. a decrease in regional balances of outsiders.
5. an increase in regional residents' ownership of securities in outside enterprises.
6. a decrease in outsiders' ownership of securities in regional enterprises.

The difficulty of interpretation may be easily seen, as the above changes are not directly related to regional economic activity levels. The major interest in the analysis of the account is not, however, in the magnitude of net investment, but rather in the distribution of the various entries in the account, both from the standpoint of geographic allocation and activity.



### Domestic Sector Accounts

The two domestic sectors in the accounting system receive a rather abbreviated treatment as compared to the export sector. Considering the relative importance of the regional trade flows, this space allocation appears rational. It may be noted, however, that this is the reverse of the usual nature of discussion for the national accounts.

These two accounts, the Regional Capital Formation Account and the Regional Consumption Account, consist primarily of value added of goods and services produced within the region on the left side; and regional purchases, less imports, on the right side. (See Table 3.)

These accounts permit the estimation of the imports of the region separately for the consumption and capital formation sectors. These estimates would be very difficult to obtain in a direct manner, as there exists little, if any, data of domestic nature on a regional basis. Although there are basic origin-destination studies in some areas which indicate some of the relevant data, they are far from comprehensive in the areal coverage required for these accounts. It is recognized that this method of determining import levels merely takes advantage of the accounting structure which requires balanced accounts. This places the burden of estimation upon the level of total purchases in each category, rather than upon import levels. The former type of estimate is considerably easier to obtain.

Table 3

## REGIONAL CAPITAL FORMATION ACCOUNT

Value added in the production of goods by manufacturers for regional capital formation.	Purchases of capital goods and services by regional businesses and individuals.
Value added in the production of goods and services by other regional sectors for regional capital formation.	Less: Imports of final and intermediate goods and services for capital formation.
CHARGES AGAINST REGIONAL CAPITAL FORMATION	REGIONAL CAPITAL FORMATION PRODUCT

## REGIONAL CONSUMPTION ACCOUNT

Value added in the production of goods by manufacturers for regional consumption.	Purchases of goods and services for consumption by regional consumers.
Value added in the production of goods and services by other regional sectors for regional consumption.	Less: Imports of final and intermediate goods and services for consumption.
CHARGES AGAINST REGIONAL CONSUMPTION PRODUCT	REGIONAL CONSUMPTION PRODUCT

### Gross Regional Product Account

The Gross Regional Product Account represents in summary form all of the preceding accounts. This account shows on the left hand side the production activity within the region for each of the major categories, export, government, capital formation, and consumption. The right hand side of the account represents the distribution of the gross regional product. (See Table 4.)

This account draws together the other accounts, permitting a summary at a glance of the relation of the regional economy to the State, the nation, and the international area. Like GNP in the national accounting framework, the Gross Regional Product provides a significant measure of the economic activity and well-being of the region.



Table 4

## GROSS REGIONAL PRODUCT ACCOUNT

Manufacturing	Export Sales
Value added in the production of goods for export	Sales of goods and services to the Rest of Pennsylvania
Value added in the production of goods for government	Sales of goods and services to the Rest of the United States
Value added in the production of goods for capital formation	Sales of goods and services to the Rest of the World (international)
Value added in the production of goods for consumption	Domestic Sales
Services and Other Sectors	Purchases of goods and services by regional consumers for consumption
Value added in the production of goods and services for export	Purchases of goods and services by regional businesses and individuals for capital formation
Value added in the production of goods and services for government	Import Purchases
Value added in the production of goods and services for capital formation	Less: Imports of intermediate goods for export
Value added in the production of goods and services for consumption	Less: Imports of final and intermediate goods and services for capital formation
Statistical Discrepancy	Less: Imports of final goods and services by regional consumers for consumption
CHARGES AGAINST GROSS REGIONAL PRODUCT	GROSS REGIONAL PRODUCT

## Data for Regional Accounts<sup>1</sup>

Regional economic accounts are voracious consumers of statistical information. Undoubtedly one of the strongest criticisms which has been leveled at regional accounting systems is their vast requirements for data. As the preceding description of the accounts indicated, information is required on a wide range of subjects, including personal, business, and government purchasing patterns; profits, dividends, production; and public and private transfer payments. A set of accounts requires information on each phase and sector of the economic activity of the Commonwealth.

The de novo development of such a complete range of data would be almost prohibitively expensive. The Commonwealth of Pennsylvania is indeed fortunate to have a well developed statistical reporting system which can provide, with minor modifications, the bulk of the needed information.

Undoubtedly the largest single source of data for the accounts will be the annual Census of Manufacturing Industries conducted by the Bureau of Statistics, Department of Internal Affairs. This survey presently obtains considerable data concerning geographical location, type of ownership, capital expenditures (investment), foreign exports, products, and value of production, contract work, resale of products without manufacture, fuels, electrical energy, materials, employees, salaries and wages. This information may be used in the preparation of the manufacturing sectors of the accounts. Additional questions might well be added to the Census form concerning the distribution of purchasing and sales activities, both by industry sector and by region; and also questions relating to the distribution of profits, taxes, employees, etc. The addition of such details to the existing census forms should be undertaken only if it is felt that they would not significantly jeopardize the existing quality of the reports. It would also be possible to obtain the additional data from a carefully designed sample of establishments. This procedure would involve increased costs and an introduction of further statistical error.

The development of a modified input-output goods flow matrix is essential for the efficient operation of the Pennsylvania segment of the Rest of the World Account. In the construction of such an input-output matrix for each region with the other regions, and further dividing each region into its component sectors, it is possible to indicate clearly the production of goods by any industry in any region and to show the distribution of that production to any industry in any region.

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<sup>1</sup>This discussion of data requirements and possible sources is not considered in any sense to be comprehensive, but rather to indicate some of the major data needs for regional accounts and to illustrate some of the possible sources.

More specifically, every row in an input-output table or matrix shows the sales made by one economic sector to every other sector, and every column shows the purchases of each economic sector from every other sector. The nature of the table and the individual entries are evident from the number and definition of the sectors utilized. Most of the current input-output tables divide the commodity producing sectors very finely, (the most elaborate tables have more than 400 industry classifications), so that the interindustry relations, i.e., the sales of intermediary products between industries, can be followed in great detail.<sup>1</sup> It is not suggested that elaborate tables are required, rather that the size of the tables be kept relatively small because of data requirements and costs. The data might well be provided through the Census questionnaires, having the respondent establishments allocate, either in absolute terms or on a percentage basis, their purchases and sales by regions and industries.

The division of the manufacturing sector of the economy should be accomplished in terms of the Standard Industrial Classification code, providing groups for each of the significant industries within the region. Some industrial groups which do not contribute significantly in some regions may be combined, while shown separately in other regions. For example, Drugs (SIC 283) might well be a separate classification in the Southeastern region of the Commonwealth, but it might be aggregated with Chemicals, Rubber, and Allied Products (SIC 28 and 30) elsewhere. The actual industrial classification divisions, however, should be based upon a thorough examination of the regional economy. A list of some possible divisions is given below:

- Agriculture
- Mining & Quarrying Minerals - except fuels
- Anthracite, Bituminous, Lignite Mining
- Crude Petroleum & Natural Gas Production
- Construction
- Ordinance & Accessories
- Food & Kindred Products
- Textile Products & Apparel
- Lumber, Wood Products, Furniture & Fixtures
- Paper & Allied Products
- Printing, Publishing & Allied Industries
- Chemicals, Rubber & Allied Products
- Drugs (Biologicals, Botanicals & Pharmaceuticals)
- Petroleum Refining & Related Industries
- Stone, Clay & Glass Products
- Primary Metals Industries
- Steel Works & Rolling Mill Products
- Iron & Steel Products

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<sup>1</sup>Raymond Goldsmith, "Introduction," National Bureau of Economic Research, Input-Output Analysis: An Appraisal, Volume 18, Studies in Income and Wealth, Princeton University Press, Princeton, 1955.



Fabricated Metal Products  
 Machinery - Non-electrical  
 Electrical Machinery, Equipment & Supplies  
 Transportation Equipment  
 Instruments, Photographic, Optical Goods, Watches  
 Miscellaneous Manufacturing Industries (nec.)  
 Transportation, Communication & Electrical,  
     Gas Utilities  
 Wholesale Trade  
 Retail Trade  
 Insurance, Finance & Real Estate  
 Personal & Miscellaneous Services (nec.)  
 Business & Professional Services, Non-Profit,  
     Educational Institutions

The service and trade sectors of the economy pose a difficult problem of data availability. Although these sectors represent a rapidly growing portion of the economy, very little accurate statistical data concerning them are available. The structure and size of the establishments make data collection a considerable problem. Although at this time there does not seem to be an operational framework for statistical data collection within these segments of the economy, the magnitude of the problem suggests that some efforts in this area will be made in the near future. The best alternative would appear to be a carefully designed sample, recognizing the volatility and elusiveness of the sectors.

The government sector of the economy, in theory, should pose no major data problems, as the information is generally a matter of public record. In fact, however, the information may be neither easily available nor in a readily usable form. The multitude of governmental agencies engaged in various activities, operating independently and jointly, causes a fragmentation of the information. The requirement of the accounts is for a comprehensive coverage of the agencies having jurisdiction in the region, with data from each agency indicating revenues, expenditures, transfer payments, salaries, wages, etc.

The federal government will provide the largest problem in this sector. There has been a growing proliferation of agencies, each engaged in providing funds or services under a multitude of programs to various jurisdictions, both independently and jointly with other federal agencies, state agencies, or local governments. The Bureau of the Budget and the local and regional offices of the major agencies, such as the Social Security Administration, Post Office Department, Veterans Administration, and the Housing and Home Finance Agency, will be able to provide some of the allocation of their funds among the regions of the Commonwealth.

Government purchases and expenditures within the Commonwealth should not pose a particularly difficult problem for an agency within the government. Receipts from the Department of Revenue and other offices should be available by source and by region, as well as expenditures by each of the major departments or agencies by regions and sector.

The decennial Census of Governments conducted by the U. S. Bureau of the Census should provide benchmark data for each of the governmental sectors, in aggregate. Generally local governments are considered endogenous to the regions and will enter into the accounts only as they purchase or provide services or funds outside their regions.

The major sector of the regional economy for which no information presently exists is that of the domestic households. Certain items of information necessary for the construction of the accounts can only reasonably be estimated from data obtained from the households. Among these items are: (1) direct payments outside the region of interest, dividends, rent, etc.; (2) receipts of interest, dividends, rent, etc. from outside the region; (3) gifts, contributions, etc. sent outside the region; (4) gifts, contributions, etc. received from outside the region; (5) salaries and wages earned outside the region; (6) purchases of goods and services from outside the region. Although the following two items may be obtained by allocation or other records, the use of the household interviews, if available, is desirable. (7) personal income; and (8) social security, retirement benefits, and other individual transfer payments.

The above household information can be obtained from a carefully designed sample interview survey. To cover the regions adequately with the desired reliability, a single purpose survey seems indicated. However, this procedure would probably be prohibitively costly. It should be feasible to incorporate this survey with other state studies, or even to use, as a partial base, existing sample programs of the federal agencies. Such joint efforts would seem to be the most economically feasible method of providing much of the required additional data for regional account purposes.

## Conclusion

Now that a possible framework for regional economic accounts has been presented, it is easier to understand the usefulness of the system for policy formulation and evaluation. These accounts which present comprehensive measures of economic activity and welfare at a point in time may also be utilized to project or anticipate various changes in regional economies over a period of time. In this manner, the accounts provide an important aid to decision-makers, permitting the observation of the suspected outcomes of various policy alternatives. By introducing into the framework the anticipated primary modifications in a given region, it is possible to observe what might be expected to happen in economic terms to that region and also to observe the secondary effects which would occur in other regions of the Commonwealth.

A comprehensive and cohesive system of regional accounts for Pennsylvania could possibly provide a much needed impetus to coordinate the activities of the large variety of agencies producing statistical data. The development of consistent definitions and methodology throughout the State, within an easily understood analytical framework would do much to alleviate many of the problems of emphasis arising from the conflicting requirements of urban, suburban, and rural activities.

Although the accounts are greedy consumers of statistics, many of which are not presently readily available, it must be remembered that currently there is a costly proliferation of single purpose, short range studies often involving duplication of effort. Integration and coordination of data programs could potentially result in cost savings and improvement in the quality of data produced.

The necessity to provide the measures of regional activity defined in the accounts would do much to sharpen requirements for metropolitan data or information services currently under discussion in several areas of Pennsylvania.

It is not critical at this time to determine whether regional information should be centrally developed by the Commonwealth or coordinated among regionally operated agencies. However, it is important to recognize the need for regional information within a consistent analytical framework, and the opportunities presented by regional accounts.



## 2. BENEFIT-COST ANALYSIS AND STATISTICAL DECISION THEORY

The earlier section of this paper concerned itself with the subject of systems of regional and local economic accounts. The contributions of such sets of accounts to planning and policy formation at the national level is universally acknowledged, and a swelling group of analysts is working on the development of these systems for application to analogous problems at sub-national levels. Systematic frameworks are sorely needed for public policy formulation and evaluation and for improved decision-making in metropolitan areas. The cohesive arrangement given by sets of accounts to the flows and stocks which are of critical economic importance in these areas provides just such a framework. These accounting systems would appear to be particularly promising in connection with regional and local economic analysis because of their concentration on definition of variables and measurement of magnitudes which are considered important in the theory of economic growth and development.

There are a variety of other constructs which appear to hold considerable promise as analytical aids for improved economic decision-making in the metropolitan environment. It is the purpose of this section to discuss two such methods of formal analysis, namely, benefit-cost analysis and modern statistical decision theory and to advocate increased experimentation with and utilization of these procedures, particularly as regards capital expenditures decisions by local urban governments. If any novelty can be claimed for the presentation in this section, it is for the emphasis upon a combination of these two promising techniques in the pervasive problem of the choice among alternative courses of action.

In terms of an overall analytical framework for urban regional or local economic analysis, sets of accounts may be thought of as means of quantifying social goals and describing the major structural and operational elements of the regional or local economy, whereas benefit-cost analysis seeks to optimize decisions concerning projects carried out primarily within the government investment sector.<sup>1</sup>

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<sup>1</sup>See W. Isard and J. H. Cumberland, Eds., "A Synthesis of Operational Methods in Regional Analysis," Regional Economic Planning, European Productivity Agency of the O.E.E.C., 1961, pages 409-420.

## Benefit-Cost Analysis

Benefit-cost analysis is a term applied to the formal study of the consequences of alternative courses of action or programs in terms of the positive gains (benefits) and negative results (costs) which flow from these actions or programs. Typically, the analysis takes the form of a detailed attempt to measure the benefits and the costs for each project as a means of assessing the desirability or merit of these projects. Historically, the early (and continuing) development of this type of analysis took place in connection with the water-resource activities of the United States federal government.<sup>1</sup> Surveys and engineering reports have been required by legislation concerning water-resources development since the nineteenth century; cost-benefit evaluations have been steadily evolving since the 1920's. The general philosophy that benefits and costs should be painstakingly scrutinized and that projects should only be undertaken when a convincing demonstration is made that benefits exceed costs has now been firmly established in the field of water-resource systems analysis. The general purposes of benefit-cost analysis in assisting in the determination of the budgets of federal agencies concerned with water resources and in guiding the selection of the particular projects and the number of them to be undertaken have clear counterparts in the area of urban governmental planning policy formation and decision-making. This type of analysis, however, is only in its embryonic stages as applied to urban planning and development decisions, and relatively few such studies have been completed. Benefit-cost analysis is easiest to apply in areas of public decision-making most closely related to private economic affairs. This explains the development of this technique in areas such as water-resources, as described above; another such field is highway investment and financing.

The specific form of benefit-cost analysis that has been and can be applied is subject to considerable variation, but all such analyses contain a number of essential components. The specific projects to be compared and the groups whose benefits and costs are to be considered must be clearly defined. There must be an identification of the goals or objectives of the project(s) or program(s) to be undertaken. A broad public viewpoint is obviously called for at this stage, if evaluations are to be made in the context of choosing among alternative actions available to a public body such as an urban local government, in contrast to a private organization such as a business corporation. Considerable difficulties become immediately evident. The statement of an ultimate end such as the satisfaction of human needs does not advance one very far along the road toward a meaningful decision. Even goals such as economic security, social and economic growth, income redistribution, freedom and leisure time leave the analyst a long way from an ability to choose among specific courses of action. Obviously, it is useful at

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<sup>1</sup>See McKean, Roland N., Efficiency in Government through Systems Analysis, John Wiley and Sons, Inc., N. Y., 1958, pp. 18-20 for a discussion of the history of benefit-cost analysis.

the outset to have in mind broadly stated goals, but to make the analysis operational, these must be translated into specific criteria, or, as they are often referred to, "tests of preferredness." There are usually a multiplicity of objectives involved in any public project; the problem of specifying optimality of realization of combinations of these objectives is troublesome and complex. Maass, in a penetrating discussion, indicates that objectives in river development such as economic efficiency, income redistribution, regional economic growth and certain noneconomic values should be determined to reflect the consensus of the community concerned.<sup>1</sup> He points out that the consensus "should be determined in the legislative process of discussion"...and should be "interpreted and converted to a form usable as a guide for subsequent governmental activity."<sup>2</sup> Clearly, these are valid points also in the determination of objectives in urban government decision-making contexts such as capital budgeting, urban redevelopment, road construction, and so forth.

### Criteria of Choice

Stemming from the statement of the objectives or goals of a project comes the specification of the criteria or "tests of preferredness" which are to be used. If the goals of a project are predominantly economic, clearly economic criteria are mainly relevant.<sup>3</sup> In any event, what is required is a maximization of a specified goal or set of goals under constraint. That is, in some sense, we would like to maximize the amount by which benefits exceed costs. This optimization must, however, inevitably be carried out under a set of constraints, or environmental limitations upon the choices to be made. As a very simple example, suppose we have the decision-making problem of a man who wants to buy a suit of clothes. He may vaguely think of his goal or objective as the obtaining of clothing to cover his body, more specifically as the obtaining of the best quality suit. The decision on the purchase of the suit will, however, be subject to constraints of price, weight of the material, style, color and so forth. The connection between the measurement problem and that of specification of criteria is clear. How is quality to be measured? How are characteristics such as weight of the material, and style to be evaluated? Assuming that a measure of quality is arrived at, it together with the specifications of constraints on price, weight of material, style and color become the "criterion of choice" as to the suit to purchase. Clearly, alternative approaches are possible. A maximum price that the purchaser is willing

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<sup>1</sup>Maass, A., "System Design and the Political Process: A General Statement," Maass, A. et al., Design of Water Resource Systems, New Techniques for Relating Economic Objectives, Engineering Analysis and Governmental Planning, Harvard University Press, Cambridge, Mass. 1962, pp. 565-604.

<sup>2</sup>Op. cit., Maass, A., page 585.

<sup>3</sup>See Otto Eckstein, "Benefit-Cost Analysis and Regional Development," Regional Economic Planning, European Productivity Agency, O.E.E.C., 1961, page 361 on this point.



to pay for a suit might be fixed by the purchaser's resources. Then the suit buyer's task may be thought of as first, the selection of those suits which meet the constraints on items such as weight of material, style and color, and then, the selection from this restricted set of the suit which yields him the most quality for a fixed cost, or which costs least for a specified level of quality. Or, if neither the cost of the suit nor its quality is treated as a constraint or fixed, the purchaser might use as his criterion of choice a maximization of net benefits in terms of quality less costs. If either the size of benefits or costs are the same in these two modes of test, it can be shown that the tests (or criterion forms) yield the same results with respect to rankings among alternative courses of action.

### Measurement Problems

A number of technical problems arise at this point. If a serious attempt at quantitative analysis as a guide to rational decision making is to be made, then benefits and costs must be commensurable. That is, if we are to assess differences between benefits and costs, they must be in comparable terms. This difficulty is evident in the simple illustration given above for an individual attempting to measure quality benefits, or to make the case even more difficult, attempting to measure multidimensional benefits, including gains other than quality from the possession of the suit and to measure costs, which in this case, may be reasonably easily stated in monetary terms. The problem is tremendously magnified, of course, if the choice among alternative decisions is transferred to a realistic urban governmental environment. The difficulties of measuring the benefits or gains which flow from such matters as urban renewal projects, recreation programs, urban transportation proposals, law enforcement procedures, air and water pollution reduction programs are all too obvious. Nevertheless, decisions concerning these items must be made and evaluation of benefits and costs are certainly implied in the choices among alternatives. The usual method of measurement in common terms is to evaluate the effects of projects in monetary terms. Market prices are generally used as the method of evaluation. Economic lives of projects, uncertainty, interest or discount rates, differing time periods for receipt of benefits and incurring of costs, and intangible as well as tangible effects must all be taken into account in the evaluation.<sup>1</sup> These and other items will be commented upon subsequently.

A second technical problem concerns the specific type of comparison to be made in determining the economic merits of projects under consideration. One approach which has been used in water resource development projects has been to screen projects initially to see if they have been formulated appropriately and are economically justifiable;

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<sup>1</sup>See section on "Measurement of Benefits and Costs" in Proposed Practices for Economic Analysis of River Basin Projects, Report to the Inter-agency Committee on Water Resources by the Subcommittee on Evaluation Standards, Washington, D. C., 1958, pages 17-33.

then comparisons are made of the relative economic merits of justified projects. Projects in this context have been considered to be "properly formulated and economically justified if: "(1) project benefits exceed project costs; (2) each separable segment or purpose provides benefits at least equal to its costs; (3) the scale of development is such as to provide the maximum net benefits; and (4) there are no more economical means of accomplishing the same purpose which would be precluded from development if the project were undertaken."<sup>1</sup>

Even abstracting from the problem of evaluation of intangible considerations, several methods may be used to evaluate projects which have passed such an initial screening procedure. One procedure quite frequently utilized is to compare ratios of benefits to costs. This procedure has the advantage, when contrasted with comparisons of absolute excesses of benefits over costs that it takes into account the relative costs of the realization of benefits. That is, if an evaluation were made solely on the basis of the absolute difference between benefits and costs, two projects could appear equally meritorious if they had equal monetary differences but one project might cost twice as much as the other. On the other hand, it can be argued that if sufficient resources are available, it is rational to attempt to maximize the excess of benefits over costs. From this point of view, maximizing a ratio of effectiveness leaves too much latitude for the absolute amount of benefits or costs to vary. Clearly, if one compares two projects with equal benefit-cost ratios, where one of the ratios involves benefits and costs of substantially greater magnitudes than the other, to choose the project with the smaller scale benefits and losses would imply foregoing a substantial amount of net benefits. If there are constraints on cost, then of course the criterion would simply reduce to a maximization of benefits for the given cost. A similar situation would prevail where benefits are thought of as specified or fixed; in that case a minimization of cost is attempted.

### The Requirements Approach

It is relevant to note at this point that one "degenerative" form of maximization under constraint to be avoided is the so-called "requirements approach." This approach involves a serious criterion error in which requirements are set up often in traditionally perceived form and then a course of action is chosen which achieves the specified requirements. In such an approach, no attempt is made at explicit determination of both the gains and costs of a project or program. Budget or resource limitations may be disregarded in the initial step of determining "feasibility"; if a particular program can meet the requirements or characteristics of performance which have been specified, it would be selected. Numerous governmental decisions at national down to local levels appear to fall into this category of decision-making procedures. The particular danger in this approach would appear to be that if measures of effective-

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<sup>1</sup>Ibid., page 15.

ness are adopted relatively uncritically at the outset, then alternative procedures become cut off and may not therefore be carefully scrutinized. Conceivably, among these other alternatives are courses of action which would better achieve an overall objective or goal in terms of excess of benefits over costs. Furthermore, important decisions concerning costs and benefits are apt to be settled implicitly too early in the analytical process before these matters are carefully examined.

For example, to take a somewhat far-fetched illustration in terms of the aforementioned individual choosing a suit of clothes, suppose he decides that what he "needs" or "requires" is a gray flannel suit. Assume further that the only gray flannel suits on the market at that time are very expensive and that he purchases one of them. Obviously, it may have been better for the individual to have maximized some dimly formulated objective by the purchase of a less expensive suit, while saving the difference in cost or by purchasing some combination of a less expensive suit plus other consumer goods. It is clear that this individual's error lay in a specification of what he "needed" while disregarding cost, or more generally, by not analyzing at the outset, in terms of a well-defined objective, the gains and costs associated with alternative courses of action.

### Suboptimization

The "requirements approach" type of error leads quite naturally to the idea of the necessity for establishing criteria which are consistent with higher level goals and criteria. That is, if the basis for choice among alternative courses of action is primarily one of seeing whether "needs" or "requirements" determined by a particular governmental agency or group are satisfied, then it is quite likely that the resultant action will be inconsistent with maximization of achievement of goals set by individuals or agencies at higher levels in the decision-making hierarchy. This is the familiar problem of "suboptimization", which features so prominently in literature in the field of operations research. Suboptimization refers to the errors introduced by the partitioning or breaking down of problems into components or sub-problems in order to establish a manageable framework of analysis. It is inevitable, even desirable, that this compartmentalization of problems will occur but the inherent dangers are evident. A brief simple example in a business setting will illustrate the point.

Suppose that a retail organization has a customer service department which handles and adjusts customer complaints. Suppose further that in a particular period, a criterion of effectiveness of operation of this department is set up mainly in terms of minimization of cost. It is quite clear that if costs are cut to the point, where (say) there are an inadequate number of employees in the service department to handle customer complaints properly, some customers may be so antagonized that they will take their future business to another company. Clearly, the cost-cutting test of effectiveness of the customer service department may be inconsistent with such higher-level criteria as gross sales growth or maximization of net profit for the store as a whole.



Analogous situations of suboptimization concerning urban services such as police and fire protection, transportation, public utilities and public housing and renewal activities are easy to cite. However, it is clear that administrative and political factors and sheer problem complexity point to the necessity for decentralized decision-making of a type which fails to scrutinize all problems of choice at all decision making levels at the same time. There are obviously both advantages and disadvantages stemming from this practical necessity for suboptimization. The crucial danger to avoid would seem to be the introduction of very gross inefficiencies with respect to higher level goals by an excessively myopic attempt at optimization at lower levels.

### Other Benefit-Cost Analysis Issues

There are obviously many other issues relevant to benefit-cost analysis in addition to those touched upon above. A brief reference will be made to a few of these, which mainly concern appropriate measurement of benefits and costs.

### Tangible and Intangible Effects

It is axiomatic that to make an intelligent comparison among alternative courses of action contemplated by an urban governmental organization, it must be possible to perceive the effects of these courses of action, both in terms of achievements and the corresponding costs entailed. It is useful to think of these effects as being either "tangible" or "intangible" in nature. The "tangible" effects are those which can be stated in terms of a common unit of measurement, usually a monetary one. Typically, in a benefit-cost analysis, a major part of the measurement problem is to convert the gains and costs which flow from the projects under consideration into dollar terms. The greater the extent to which this translation into monetary terms can be made, the greater in general is the confidence that may be placed in the results of the analysis. The valuation should be made, to the extent possible, in terms of market prices. That is, on the benefits side, the products or services of the projects should be evaluated in terms of what the consumers of these products and services are willing to pay. These prices are conceptually the exchange values existent at the time the benefits are received. In the case of many governmental services, adequate competitive markets do not exist for the pricing of these services. A valuation may then be made in terms of the factor costs of production involved in the most probable alternative method of producing the same services. In transportation studies, simulated markets have been devised to determine demand prices if the services publicly produced had been evaluated in a private "free market."

On the cost side, the essential concept is in terms of "foregone gains," that is, the value of the goods and services used up in the project if they had been diverted to other uses or purposes. Since these goods and services consumed to produce the project in question could have been utilized in other ways, the economic cost of their use in this project is

their value in alternative uses. Where market prices are paid for these goods and services, they serve as reasonable estimates of alternative use values. In situations where it is apparent that there are no alternative uses for the commodities and services consumed in a project, technically the economic cost involved is zero. The difficulties inherent in obtaining conceptually satisfactory estimates of costs in periods during which there are idle factors of production are obvious.

In cases where measurement in monetary units is not practical, attempts have been made to express benefits and costs in physical units. Turning now to the idea of intangible effects, it is evident that many of the consequences or results that flow from courses of action are not easily translatable into monetary or physical units. In a large metropolitan region, for example, a joint transportation project involving a number of local governmental units may have effects on the type of balance that will be accomplished in future regional development, on the possible loss of sovereignty of individual governmental units involved, on the provision of new opportunities to residents of the region to sources of recreation or leisure enjoyment, on the provision of access to new opportunities in employment and housing, in effects on competition in the transportation field, on the ease of obtaining region-wide cooperation in other projects, etc. All analysts agree that a conscientious effort should be made to measure in terms of the common unit all aspects of these effects which are quantifiable. For the remainder, these intangible effects must be carefully analyzed, explained and described. It is clear that although these effects may not be expressible in numerical terms, they are none-the-less important in the decision to be made. Some researchers assert that all aspects of benefits and cost should and can be put into common commensurable terms. That opinion, however, seems to be unduly utopian. It is clear that no clean-cut prescriptive procedures can be laid down on where the line of demarcation lies between measurable and unmeasurable items.

The question can be raised, in view of the intractability of measurement of intangible items, as to why an attempt should be made to include them in benefit-cost studies. The main reply to this question is simply that if intangible effects are sufficiently important, rankings of preference of projects based solely upon consideration of tangible effects are not valid for specifying courses of action. Furthermore, it can be pointed out that if the analysis of the tangible items is carried out in monetary terms, then the minimum valuation to be placed on intangibles can be arrived at by taking differences between net benefits (benefits minus costs) in monetary terms for alternative courses of action. For example, suppose, two projects, A and B, are proposed to perform the same urban governmental function and suppose that the net benefits of project A exceed those of project B by \$ X. Further assume that because of intangible effects project B is chosen as the preferred course of action. It is clear that the net value of the intangible effects of B are assumed to exceed the corresponding net values for A by at least \$ X. It would be wise, obviously to have a careful and precise description of the intangible effects so that the reasonableness of a valuation of \$ X for the difference in net intangible

values may be assessed. Supplementary measures or indicators can sometimes be developed for the intangibles in other than monetary units to aid in this assessment.

### Time Streams of Gains and Costs

The benefits and costs which accrue from alternative urban governmental courses of action do not occur, of course, as single values at a particular point in time, but rather as streams over time. The pay-offs of investment projects, for example, may occur over a long period of years and similarly the costs, such as construction, operating, maintenance, and replacement of components may stretch out over protracted periods. The problems connected with the temporal aspects of comparison of alternative projects are intricate and difficult, and are intertwined with other intractable matters such as uncertainty and the appropriate period of the planning horizon. It is not surprising, therefore, that correct treatment of the time problem is a matter of considerable controversy.<sup>1</sup> Leaving aside for the moment difficulties connected with differences in the certainty of occurrence of benefits and costs, the values of these benefits and costs must be converted to an equivalent point in time before comparisons can be made. This stems, of course, from the fact that benefits and costs realized in different years are not equivalent and cannot therefore simply be aggregated. The common point in time at which comparisons are usually made is the present. The test often takes the form of a comparison of present values or present worths of all gains and costs of different alternatives using an appropriate discount rate to obtain the weights to be applied to money values at different points in time. Since a dollar received in the future is worth less than a dollar received today, benefits and costs which accrue in the future must be "discounted" to obtain their present values. Much of the controversy earlier referred to centers around the correct discount rate to be applied. Since this matter has been extensively debated in the literature and a review of this debate is beyond the scope of this paper, only a few comments will be made on interest and discount rates.

An interest or discount rate may simply be viewed as a means of expressing the way that values of future goods and services are converted into present values. Economic theory has noted that there are both "time" and "risk" elements involved in this translation or exchange of future into present values. One approach has been to have the interest or discount rate perform the basic function of making allowance for the different time occurrences of the various benefits and costs; then a separate "risk allowance" is added to account for differences in riskiness of various types of

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<sup>1</sup>See for example, Otto Eckstein, Water Resource Development; The Economics of Project Evaluation, Harvard University Press, 1958, particularly pp. 94-104 and various discussions in Stephen A. Marglin, Approaches to Dynamic Investment Planning, North-Holland Publishing Company, Amsterdam, 1963.



loans or investments. It has been recommended that predictable risks, such as those for which the probability or relative frequency of occurrence are reasonably well known, be taken into account by insurance or similar allowances.<sup>1</sup> These allowances can then either be added to costs or deducted from benefits. Along with this procedure it is further recommended that, "Allowance for uncertainties or unpredictable risks in benefit accrual should be made indirectly by use of conservative estimates of net benefits, requirements of safety margins in planning, or including a risk component in the discount rate."<sup>2</sup>

A relatively sophisticated approach is called for in arriving at the appropriate discount rate. An important distinction to be made is the one between "no capital rationing" and "capital rationing" cases. The "no capital rationing" case refers to the situation in which the budget available for investment purposes can be augmented through borrowing. In this situation, normative considerations indicate that investment in projects should continue just so long as the yield from these investments exceeds the rate at which money can be borrowed. If projects are ranked according to their yields, investment should obviously cease upon arrival at the first project whose yield sinks below the rate at which funds may be borrowed. This yield method arrives at what has been referred to as an "internal rate of return."<sup>3</sup> This rate may be thought of as the one which exactly makes the present value of the stream of receipts or proceeds of a project equal to the present value of the stream of costs.

In the capital rationing case, which is probably the more pertinent one insofar as governmental agencies are concerned, investment budgets are relatively fixed. These agencies do not realistically have the opportunity to invest in all projects whose yields lie above the market rate. McKean recommends, as a practical procedure, in these cases, the computation of the present values of gain-cost streams for several alternative sizes of projects and for a few discount rates as well.<sup>4</sup> Furthermore, the suggestion is also made that a few combinations of interrelated projects be considered. A couple of analysts have pointed out that in connection with municipal planning, cities have generally simply used their borrowing rate as the appropriate discount factor.<sup>5</sup> These researchers argue, validly

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<sup>1</sup>See Proposed Practices for Economic Analysis of River Basin Projects, loc. cit., pages 22-23.

<sup>2</sup>Op. cit., page 23.

<sup>3</sup>Other terms have frequently been used for the same concept. See for example, H. Bierman and S. Smidt, The Capital Budgeting Decision, where the internal rate of return is also referred to as interest rate of return, return on investment, present value return on investment, discounted cash flow, profitability index, investor's method and marginal efficiency of capital.

<sup>4</sup>McKean, loc. cit., page 89.

<sup>5</sup>N. Lichfield and J. Margolis, Benefits-Costs Analysis as a Tool in Urban Government Decision Making, The Committee on Urban Economics of Resources for the Future, Inc., 1962 (mimeographed), pages 36-37.

in our opinion, the illogicality of this practice and that apart from uncertainty considerations attached to particular alternatives, municipal and Federal discount rates should be computed on the same basis. Aside from theoretical considerations associated with the reasonableness of similarities in governmental judgments about income substitution rates between years in the future, they note the increasing participation of the Federal government in municipal projects are as such as urban renewal, water supply, etc. in support of their point of view. It certainly appears reasonable that the appropriate discount rate exceed the mere cost of borrowing funds and that it should adhere to the minimum attractive rate of return concept.

### Planning Horizons and Uncertainty

The time stream problems discussed above stem basically from the fact that there are inevitable time lags between the initiation of projects and the points in time of realization of benefits and costs from these projects. The results of the actions taken in initiating projects are conceived of as flows of benefits and costs massed in different amounts over time. A factor of obvious importance in the valuation of these streams is the assumption made concerning their durations. The period of time chosen for analysis of gain-cost streams has been referred to as the "planning horizon" or "time horizon," and the time-point beyond which costs and gains are not to be considered as the "cut-off date." The planning horizon reflects the length of the time period over which the analyst feels that he can meaningfully perceive estimates of gains and costs. By ignoring estimates beyond the cut-off date, he, in essence, applies a discount rate of zero to all figures beyond that date. Salvage values as of given dates, of course, can be used as simplifying devices for ignoring estimates beyond the estimated dates of salvage. The difficulties of estimating costs and gains for periods far removed from the inception of the project is a sufficient reason in itself for placing a definite limit on the time period of analysis. Of course, there are risks and uncertainties of great variety attached to estimates of gains and costs even at time points close to the starting date.<sup>1</sup> Some analysts have recommended the use of shorter time horizons to allow for risk and uncertainty, but this simple prescriptive is clearly not adequate to take account of the pervasive and tremendously important factor of uncertainty.

By the very nature of the case, no single universally accepted technique exists to treat the problem of uncertainties regarding consequences of actions. In many engineering-economy type studies, as indicated above, the use of risk allowances in discount rates and the truncating of time horizons have represented the main methods of attack. This approach has usually been accompanied by the use of single values at each

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<sup>1</sup>The distinction that is usually made between risk and uncertainty in decision-making contexts is that in a risk situation the probabilities associated with outcomes are known, whereas under uncertainty, even these probabilities are unknown.

point in the gain-cost streams to be discounted. That is, a single cost figure at a given point in time is taken to be the "certainty equivalent" of what is conceptually a frequency distribution of possible costs at that point in time. While methods are available for treating these cost figures as frequency distributions at each point in time rather than as single valued estimates, as a practical matter, there usually is insufficient basis for making this type of extension of the analysis.<sup>1</sup>

In the absence of suitable information on the probability distribution of possible outcomes, a variety of approaches is feasible. Sets of values can be shown for the discounted present values of gain-cost streams reflecting different discrete assumptions concerning outcomes. These values, for example, might reflect low, high and medium estimates. Such experimentation with variations in original assumptions may be referred to as "sensitivity analysis." This type of analysis is particularly useful in indicating to the decision-maker the criticalness of various assumptions that

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<sup>1</sup>Under conditions of certainty, the present value of a stream of costs involving an initial investment  $I$ , and additional costs of  $C_j$  per period,  $j = 1, 2, \dots, n$  with a salvage value of  $S_n$  at the end of the  $n^{\text{th}}$  period, and discount rate  $i$  is given by

$$P.V. = I + \sum_{j=1}^n \frac{C_j}{(1+i)^j} - \frac{S_n}{(1+i)^n}$$

Assume probability density functions for the possible outcomes of costs and salvage value as follows:

$$\begin{aligned} g(C_j) &= \text{probability density function of costs in period } j \\ h(S_n) &= \text{probability density function of the salvage value at} \\ &\quad \text{end of } n^{\text{th}} \text{ period.} \end{aligned}$$

Then the expected value of the present worth of all costs is:

$$E(P.V.) = I + \sum_{j=1}^n \frac{E(C_j)}{(1+i)^j} - \frac{E(S_n)}{(1+i)^n}$$

If the additional assumption is made that  $g(C_j)$  and  $h(S_n)$  are normal with means  $E(C_j)$ ,  $E(S_n)$  and variances  $V(C_j)$  and  $V(S_n)$  respectively, then the probability density function of  $P.V.$  is normal with mean  $E(P.V.)$  and variance

$$V(P.V.) = \sum_{j=1}^n \frac{V(C_j)}{(1+i)^{2j}} + \frac{V(S_n)}{(1+i)^{2n}}$$



might be made in determining the optimal action to be taken. If a particular course of action is preferable to all other actions under consideration for all possible outcomes, that course of action is said to be the "dominant" one. More usually, of course, the most desirable action will change depending upon the combinations of assumptions made concerning factors which determine outcomes, and an analysis of this sensitivity can be one of the most fruitful parts of a quantitative analysis prior to decision-making. In a broad context, if the measure of effectiveness, for example, the present worth of discounted net benefits, is viewed as a mathematical model, then sensitivity analysis can be thought of as a "simulation," a series of experiments in which the model is manipulated by changing the inputs. The model, of course, is merely our abstract representation of the system or process under examination. For problems sufficiently complex in nature, simulations carried out on computers may constitute valuable supplementary techniques of analysis.

There are relatively few flat statements that can be made concerning how results of analysis should be shown. Ranges of outcomes may be shown for which it is felt that roughly the same degree of confidence pertains.<sup>1</sup> Many analysts have advanced the notion of showing expected benefit-cost ratios along with the standard deviations of these ratios. In any event, it is essential that an explicit attempt be made to deal with and describe the nature and pattern of uncertainty present so that the decision-makers can assess and take this uncertainty into account.

Now that a general exposition has been given on benefit-cost analysis, a brief description will be offered of a few actual benefit-cost studies in urban decision making contexts. Following this, the elements of statistical decision theory will be explained. Then, suggestions will be given concerning a combination and synthesis of benefit-cost analysis and statistical decision theory as a promising set of tools for the analysis of alternative actions in urban economic planning and development areas.

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<sup>1</sup>McKean, loc. cit., page 71.

## Benefit-Cost Studies

The following discussion of benefit-cost studies has as its purposes the indication in terms of specific illustrations of the nature of such analyses and also the provision of the setting for comments on the potential contribution of statistical decision theory to these studies. Since so very few benefit-cost studies have been carried out in the fields of urban planning and development, and since even the methods of identifying and comparing such benefits and costs are only now beginning to be developed, this section will mainly rely upon a few of these pioneering attempts.<sup>1</sup>

## Redevelopment Studies

In a valuable, closely reasoned study, N. Lichfield has accomplished three benefit-cost analyses of redevelopment problems in San Francisco, which are quite typical of such problems in other large cities, and therefore have broad applicability.<sup>2</sup> The first problem was an analysis of alternatives concerning the future of the Old Mint. This building, which no longer was used for the purpose of minting, had a site value in excess of its existent property worth. It was too obsolete for useful service as an office building, but possessed considerable historical and architectural value. Essentially the alternatives faced by the General Services Administration of the Federal Government were in terms of a preservation and restoration of the structure, or the demolition of the building and sale for subsequent commercial development. The analysis of the alternatives has been discussed elsewhere and will not be commented on further here.<sup>3</sup>

The other two studies, which dealt with somewhat more complex problems than the first, will be examined in this report. The second study concerned three possible land uses for a portion of an area which had been designated as blighted. The relevant portion of land, consisting of some three acres, was slated to be developed as a park (Ferry Park) under the City's Redevelopment Plan. The alternatives selected for analysis were (1) the contemplated use as a Park, (2) the redevelopment of the site for office purposes and, (3) the retention of the site in its present state. In all three alternatives, the understanding was that all other aspects of the overall Redevelopment Plan remained unchanged.

The third problem concerned the desirability of redeveloping an area as the first project in the redevelopment of a blighted section of the city. The project was called the Geary Street Project, Western Addition.

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<sup>1</sup>See Lichfield, N., "Cost-Benefit Analysis in City Planning," Journal of the American Institute of Planners, Vol. XXVI, No. 4, November 1960, pp. 273-279 for a brief methodological description and advocacy of this type of analysis in city planning.

<sup>2</sup>Lichfield, N., Cost-Benefit Analysis in Urban Redevelopment, Real Estate Research Program, Institute of Business and Economic Research, University of California, Berkeley, 1962.

<sup>3</sup>See Lichfield and Margolis, loc. cit., particularly pp. 53-56.

The Western addition is a residential district covering an area of about  $2\frac{1}{4}$  miles and had a population of about 86,000 persons (1950). The major existing use of the land was primarily light industrial and commercial. In this case, the alternatives analyzed were simply (1) redevelopment in accordance with proposals in the Redevelopment Plan and (2) retention of the area in its present underdeveloped form.

A few general comments on the nature of the benefit-cost analysis carried out are pertinent before taking a look at the specific studies.

While it is quite difficult to carry out precise economy studies even for the evaluation of alternative courses of action in privately owned commercial enterprises, it is substantially more difficult in decision-making in the public sector. In a private enterprise, net profits may be a suitable proximate criterion of efficiency and a maximization of expected discounted net profits or cash flow over the planning period may be a reasonably suitable ranking criterion. On the other hand, in public decisions, for example, in city planning, the services and products flow to the people represented by the planning agency and these goods are usually not exchanged in the market place in terms of prices paid. Furthermore, in its analysis, the privately owned commercial enterprise would ordinarily consider relevant only those costs incurred by it and benefits accruing directly to it. It is clear that in most private investment decisions, costs and benefits would fall upon other parties as well, but these would normally not be considered in the investment analysis. In investment in the public sector, benefits and costs are diffused over a large number of different groups. It is widely recognized that some sort of "general welfare" criterion is relevant in these cases. Cost-revenue analyses for municipalities in which costs incurred by the political jurisdiction in question and benefits received in the form of taxes accruing to it alone are measured - are too narrow in concept. In the case of federal water resources projects, ideally, a criterion in terms of a maximization of national well-being or satisfaction would seem to be in order. From whose viewpoint, therefore, should projects carried out in the environment of urban planning and development be analyzed? Possibilities include the particular governmental agency or agencies concerned with the decision, the political jurisdiction involved or the people in the community it represents, and larger political groups upon whom the benefits and costs may fall, reaching up to the national level.

Very sensible resolutions of the above-mentioned problems were effected in the Lichfield studies, and in view of the embryonic state of benefit-cost analysis, they might be taken as frameworks of analysis to which adaptations might be made for the special problems of a large variety of urban planning decisions.

On the matter of the incidence of benefits and costs, a classification was made of "producers" and "consumers." The "producers" are the individuals and groups who bring about the services which flow from the redevelopment. The "consumers" are the individuals and groups who use the services. The benefits reaped by the consumers were associated with the costs incurred by producers through "transactions." That is,



the producers and consumers were linked as though "sales" of services are made from the former to the latter. So-called "social accounts" were therefore created to specify which individuals and groups produce and receive benefits. Thus, a rather omnibus answer is delivered to the question previously asked concerning from whose viewpoint should the analysis be carried out. The answer in these studies was to enumerate and assess the gains and costs incurred by all affected parties. Furthermore, an attempt was made to measure benefits and costs incurred on the redevelopment site and outside it as well.

The dichotomy implied by the last statement is the classification into "direct" versus "indirect" benefits and costs. That is, benefits and costs incurred directly on the redevelopment site are referred to as "direct"; those incurred elsewhere as "indirect." Benefits are values of services resulting from the redevelopment project, whereas costs are values of goods and services used to produce, maintain, and operate the redevelopment. Both "real" and "transfer" elements of direct benefits and costs are measured. For example, the developer's cost of demolishing old structures and putting new ones in place are "real" whereas the price of acquisition may be classified as a "transfer cost." Indirect costs fell upon three different groups: occupiers and owners of existing buildings; owners of property with potential development value; and local government, both municipality and special districts. Various subtleties are involved in the measurements of costs, some arising from the distinction between current use values, pertaining to the use of the property in its present state and potential use value, and referring to potential uses arising from demand for the developed or redeveloped property. Further problems in cost measurement arise out of the complex financing arrangements in the redevelopment process. The formulas used in the Lichfield studies to derive "net project cost" and "gross project cost" can easily be adjusted for variations in financing arrangements among areas and over time.

On the benefits side, market net rental values were the basic measure of benefits flowing from land and buildings. This measure is clearly a proxy for direct measurement of the tremendous range of services involved, but data and forecasting difficulties made such measurement impracticable.

Turning now to the analysis, in the Ferry Park project, benefits and costs were obtained for the aforementioned three alternatives. Absolute costs and benefits were obtained for the Park use alternative, and differences from these totals were indicated for the other two alternatives. This is an example of the "with and without" approach of benefit-cost analysis in which comparisons are made between the situation that would obtain if the project were carried out ("with"), and the situation if it were not ("without"). In the Ferry Park study, the comparison was made in terms of total costs and benefits, although for convenience the Ferry Park use alternative was taken as a standard and differences were shown from it. Either marginal or total costs can, of course, be shown. The advantage of showing total costs is that relative orders of magnitude become apparent when differences among alternatives can be compared with totals. The incremental cost and benefit point of view is essential in this type of analysis, however, and benefits and costs should not be associated with the

project if they would occur both with the implementation of the project and without it.

The accounting rules for these studies called for a listing of benefits and costs in respective columns under each alternative. One side of the table was for producers, the other for consumers. Capital and annual costs and benefits were kept separate, and discounting was ignored. Measurable items which were not measured were indicated as well as intangible items. Where the direction, but not amount of change of an item could be forecast, plus and minus signs were used. Suitable cross references and notations were made for avoidance of double-counting. Where it was possible to show money entries, a single figure was shown for benefit and one for cost for each item, with multiple entries being reduced to simplest terms. In a summary table, net differences in reduced costs and benefits among the three alternatives were shown. The algebraic netting procedure involved treating positive benefits and negative costs as positive, and negative benefits and positive costs as negative.

The breadth of viewpoint required with respect to the recording of incidence of benefits and costs is suggested by the following list of producers and consumers in the Ferry Park study:

Producers: Redevelopment agency, city redevelopment, municipal railway, federal government, displaced on-site owners, off-site owners, and private project developers.

Consumers: Redevelopment agency, San Francisco citizens and visitors, municipal railway users-general terminus, nation as a whole, displaced on site occupiers, off-site occupiers, potential occupiers on project, and city taxpayers.

The analysis clearly pointed to the advantages of redevelopment particularly since in the "no redevelopment" alternative, the cash grant-in-aid would be the same as in the "office construction" alternative, with property owners, citizens, visitors, and the nation as a whole worse off. Of course, with no redevelopment, occupants of the blighted area and taxpayers would be better off. The analysis, however, sharply focused the benefits to the various parties involved with relatively little cost in city revenue of redevelopment for office construction as opposed to no redevelopment. In comparing the "park use" versus "office construction," analysis further spotlighted benefits to various parties of "park use" where gains accrued to nearby owners and occupiers, citizens and visitors, and the national taxpayer, in addition to the obvious ones to park users.

In the Geary Street Project, Western Addition, only two alternatives were considered, (1) redevelopment according to the Redevelopment Plan and (2) retention of the area in its current condition. In the basic benefit-cost table, therefore, it sufficed merely to show differences between these two alternatives. The summary table then simply involved transferring and netting these differences and some regrouping of con-

sumer classifications from the basic table. A couple of methodological points in this study are worth noting, because of their obvious application to other analyses of this type. Lichfield points out that the "without" (redevelopment) situation was regarded in static rather than dynamic terms. That is, the "without" alternative pertained to conditions as they existed at the time of the study, rather than to what they might become if there were no redevelopment project. Furthermore, in the "with" situation, probable occurrences outside the Project Area, including those stemming from other interdependent public and private projects clearly affected the former and new occupants of the Project Area. The analysis carried out was only partial, in that a study of these complex effects was not made. The producers and consumers considered were:

Producers: Redevelopment agency, city services, city redevelopment, federal government, displaced on-site owners.

Consumers: Redevelopment agency, city users, San Francisco citizens and visitors, nation as a whole, displaced on site occupiers, and city tax payers.

This analysis resulted in an indication that if the redevelopment alternative were chosen, at least \$32 million would have to be spent on creating new real capital and \$9 million of fixed capital would be destroyed. About \$6 million would have to come from national taxpayers. Net benefits flow to many sections of the community and certain other sections suffer net costs. However, it is essential to point out that neither this benefit-cost analysis nor any other which deals with a realistic urban problem with complex social, economic, political and other factors involved can give a mechanical quantitative guide to decisions among alternatives. The analysis, however, helps considerably in unsnarling the complexities involved and makes value judgments much easier to make on matters such as the overall desirability of the clearing out and redevelopment of urban blighted areas.

#### A Site Location Study

Another one of the small number of benefit-cost studies that have been carried out in fields other than water-resources and transportation is an analysis whose purpose was "to facilitate the systematic and comprehensive evaluation and comparison of alternative locations for Federal employment centers in the National Capital Metropolitan Area."<sup>1</sup> This study, carried out by C-E-I-R, Inc. developed a model which operates

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<sup>1</sup>An Analytical Technique for the Selection of Federal Employment Center Locations in the National Capital Region, prepared for the National Capital Planning Commission and the National Capital Regional Planning Council by C-E-I-R, Inc., Arlington, Virginia, 1961.



in two separate steps. First, a procedure is used for the screening of a large number of possible sites by comparing their characteristics with site specifications. Second, a site evaluation process attempts to establish values for those sites which have qualified by passing the initial screening process. The technique utilized to arrive at the valuations in the second stage is described by the authors as a process in which cost-benefit values are analyzed and compared for each site which emerges from the screening process. As will be noted at a later point, the method is perhaps better characterized as a "modified requirements approach" rather than as a pure benefit-cost analysis.

Industrial location analyses usually employ comparative cost approaches in an attempt to determine in which region or regions an industry can minimize total production and distribution costs.<sup>1</sup> The orientation of the Federal employment center location study is, of course, a much broader one, taking the typically comprehensive point of view of benefit-cost studies with respect to incidence of costs. Decisions concerning the location of such centers have an obvious impact upon the Metropolitan area, and have varying types of effects, both beneficial and adverse upon surrounding communities. Furthermore, there are effects upon community facility requirements in fields such as transportation and education and upon community residential and business patterns. Unlike the situation in location studies for private enterprises, account must be taken of the shifting responsibilities of and impacts upon local, state and Federal governments. Also, constraints such as dispersal policies for Federal facilities because of the possibility of future enemy nuclear attack are imposed upon these location decisions.

In a very thorough attempt to identify and select the critical factors to be used in the first stage screening of possible site locations, the investigators analyzed pertinent files, met with individuals connected with local planning and community groups and with Federal officials.<sup>2</sup> They were thus able to ascertain and evaluate the criteria used for past location decisions and suggested criteria for future site choices. Thus, a list of hundreds of critical factors was developed which was further discussed with a broad group of relevant persons. Further rounds of modification brought about a final list of critical factors to be utilized in the location model's constraints. These factors were stratified into five groupings. No explicit weighting scheme was devised for these groupings, although it is clear that models of this sort are sufficiently flexible to permit different groupings, rearrangement of items, and the use of appropriate weighting schemes to suit the purposes of the decision-makers.

A particular characteristic of the two-stage procedure is that it permits a reasonably clear cut separation to be made of the consideration of non-quantifiable and quantifiable factors in the analysis. That is, in

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<sup>1</sup>See for example W. Isard et. al., Methods of Regional Analysis, John Wiley and Sons, New York 1960, page 233.

<sup>2</sup>C-E-I-R Inc. study, loc. cit., page 4.

the first stage screening, critical factors can be introduced as constraints upon choice. For example, broad plans and policies concerning the comprehensive development pattern of the National Capital Metropolitan Area and the Federal government were utilized as constraints which every site had to satisfy in order to qualify for the more detailed second stage quantitative analysis. The second stage then became an objective, quantitative comparison of costs among alternative site locations using the dollar as the common unit of measurement.

The location requirement specifications utilized at the first stage include general location considerations, defense policy considerations, agency characteristics, and agency preferences. The sites available for consideration then could be analyzed for such factors as ownership status, availability, and costs of acquisition. After such data and characteristics are determined for potential sites, these sites can be evaluated with respect to the location requirement specifications. Assuming that several sites pass this screening test, the second stage analysis can then be applied. A comment is made at a later point on the situation in which no site or perhaps only one passes the screening process.

The second stage site evaluation process takes the form of compiling dollar figures for the costs involved under the following five factor headings for each of the potential sites: (1) agency capital costs, (2) agency operating and employees' costs, (3) direct agency impact costs, (4) employees' impact on local governments and (5) indirect impact on community business and residents. Large numbers of individual factors can be evaluated in dollar terms under each of the groupings. Since totals for the groupings are not additive without the introduction of some weighting scheme, in this model the guide to choice among alternative courses of action is in terms of direct cost comparisons for each grouping among the different potential sites.

All of the costs included in this model were given specific mathematical formulation. This mathematical representation of the site evaluation procedure permits easy modification for inclusion or exclusion of cost factors.

For the purpose of illustration, a couple of simple cost formulas under the first factor grouping with the accompanying verbal description are given below:

$$(1) \quad C^{(10)} = C^{(09)} + C^{(11)}$$

Agency capital site costs are the sum of land acquisition and construction costs.

$$(2) \quad C^{(09)} = X_i^{(01)} \left( p^{(10)} + p^{(21)} \right) + X_i^{(01)} \left( p^{(22)} + p^{(23)} \right) + p^{(11)} X^{(02)}$$

Land acquisition cost represents the total acreage required multiplied by the cost per acre, including administrative costs incident to acquisition, plus any added costs for existing structures on the land which are not included in the cost of the land.

In summary, the analysts have presented a model for the systematic evaluation of the major effects of alternative site locations. The first two groups of direct costs are clearly the most significant ones for a decision along the lines of criteria of economic efficiency from the viewpoint of the agency itself. Where new sites are being considered, the third group, direct agency impact costs, also becomes very significant. This group includes such items as community costs stemming from the need to provide streets, highways, water and other services and utilities for the operation of the employment center. The analysts point out that an informed objective opinion may be reached without consideration of the last cost grouping, namely, the indirect impact upon community business and residents. A comment is pertinent at this point on the nature of a full-fledged benefit-cost study as opposed to a requirements approach study.

As noted earlier, the analytical technique suggested for the selection of Federal employment location centers is perhaps more properly described as a "modified requirements approach" study rather than as a benefit-cost study. It can undoubtedly be argued that it would be exceedingly difficult to produce explicit benefit estimates for the various parties concerned in a location site decision. However, frequently in benefit-cost studies, specific quantitative values are not required. It may be of considerable value merely to point out the incidence and relative importance of these benefits. Failure to consider benefits at all opens the door to all the inherent limitations of the requirements approach.

In all fairness to the authors of the Federal employment center location study described above, their method is far superior to the out-and-out requirements approach of many studies carried out at all levels of government. In these latter studies, frequently a problem or "required" task is set up with little consideration being given at the first stage to the cost to obtain this requirement.<sup>1</sup> The requirement is at first related to need alone. Often, there is little explicit analysis of the benefits or pay-offs to be potentially derived. After this stage is completed, questions such as, "Will the budget be available?", are asked. At the time of setting the requirements or establishing the budget, however, no explicit study of gains and costs of alternative projects or programs is made. As McKean points out, the real danger in this approach is that important problems of choice may already have been disposed of before costs are considered at all. There is an implicit recognition of this point in the Federal employment center location study, where it is indicated that if only one site passes the screening step, the characteristics of the site as related to the specified location requirements should be reexamined very carefully to ascertain whether there has been a "bias" in the establishment of the location requirements initially. It is probably pertinent to point out that at the outset perhaps several different tasks, levels of accomplishment or scales of effectiveness should be applied for requirements. If the same location turns out to be the best choice for all of these tasks or scales of effectiveness, the choice is clear. It would seem that

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<sup>1</sup>See McKean, loc. cit., pages 11-12, 38, 47, 97.



this procedure is a logical extension of the suggested procedure where only one site passes the screening test and is more in line with the general philosophy of benefit-cost analysis. Similar comments are pertinent for the case where none of the sites considered meets the first stage specification of location requirements.

Now that the general nature of benefit-cost analysis as an aid to decision-making in urban planning and development and some illustrative studies involving such analysis have been examined, we turn to statistical decision theory, another promising technique for the rationalization of decision-making in an environment of uncertainty.

## Statistical Decision Theory

Statistical decision theory is a body of normative techniques for the making of choices among alternative courses of action. This type of theory has had considerable development in recent years. The judicious application of these methods to a wide variety of problems of choice in urban planning and development would appear to hold considerable promise for the improvement of decision-making in those areas. The methods of decision theory may be applied by themselves, or in conjunction with other techniques. In this section of the paper, a brief explanation will be given of the elements of this type of theory using an expository illustration in the field of urban redevelopment. Major emphasis will be upon how such methods can be used in urban planning decision-making particularly if linked with benefit-cost analysis.

The basic framework for the problem of decision theory is contained in a table designated as the "payoff matrix". The problem is viewed as one of choosing the best of two or more alternative courses of action. The consequences of the choice depend, of course, on the action selected but also upon the "state of nature" which prevails. The states of nature are unknown prior to the making of the decision, but after a particular act is selected, the conjunction of this act and the particular state of nature which has occurred determines the payoff.

### A Hypothetical Example

For purposes of illustration, a hypothetical problem of choice will be given in the field of urban redevelopment. The example is admittedly artificial in nature in order to simplify the exposition and to indicate the underlying logic. Assume that a private developer is faced with the problem of redeveloping a site for office construction or not to redevelop the site at all. Assume further that his decision primarily turns on his estimate of the potential demand for office units.

Two courses of action are assumed,  $A_1$ : redevelop the site for offices and  $A_2$ : do not redevelop. The states of nature for potential demand for simplicity at this point are classified into two mutually exclusive and exhaustive categories,  $O_1$  (outcome one): The percentage of offices rented ( $p$ ) is less than some specified figure ( $p_0$ ) and  $O_2$ : (outcome two), the percentage of offices rented ( $p$ ) is equal to or greater than the specified figure ( $p_0$ ). The states of nature may be abbreviated as  $O_1$ :  $p < p_0$  and  $O_2$ :  $p \geq p_0$ . The symbol  $p$  may be thought of as a random variable denoting demand in terms of an average percentage of office units rented during the period of analysis. It will further be assumed that numerical utilities could be and were assigned by the developer to each cell represented by the intersections of possible acts and states of nature as follows:

Utility Payoff Matrix for  
Redevelopment Decision Problem

State of Nature (Rental Demand for Offices)	$A_1$ (Redevelop)	$A_2$ (Do not redevelop)
$O_1: P < P$	- 50	0
$O_2: P \geq P$	+ 70	- 50

The nature of the payoff table requires some comment. For simplicity of exposition, utility units in the Von Neumann-Morganstern sense are used here rather than the more usual monetary measures such as net profit and cash flow.<sup>1</sup> Virtually every practical application of the decision theory model, however, uses some proxy measure of utility such as monetary values primarily because of the difficulty of deriving empirical utility functions. The subsequent argument is not affected by the use of utilities and the entire illustration could have been carried through in monetary terms.<sup>2</sup> The low value for utility in the cell representing the conjunction of act  $A_1$  (redevelop) and  $O_1$  ( $p < p_0$ ) indicates the low financial return which would be realized if the redevelopment is carried out but the demand for offices is low; the conjunction of  $A_1$  (redevelop) and  $O_2$  ( $p \geq p_0$ ) reflects the favorable financial rewards accompanying redevelopment and high demand; the low payoff value for the intersection of act  $A_2$  (do not redevelop) and outcome  $O_2$  ( $p \geq p_0$ ) reflects potential profits foregone in the case of high demand but failure to undertake redevelopment, and so forth.

The problem now is, which is the preferable act,  $A_1$  or  $A_2$ ? If one of the two alternatives would always be preferred, regardless of the state of nature which prevailed, this alternative is said to dominate the other. Usually, of course, this is not the situation and a principle of choice is required. A large number of principles for selecting alternatives have been discussed in the literature, but the only one which will be considered here is the so called Bayesian approach.<sup>3</sup> In the Bayesian approach, the decision-maker assigns subjective probabilities to the various states of nature and then selects that act which has the highest expected utility (or expected monetary value, etc.). Since the particular

<sup>1</sup> Von Neumann, J. and Morganstern O., Theory of Games and Economic Behavior, Princeton University Press, Princeton, N. J., 1944.

<sup>2</sup> The use of proximate measures of utility assumes a linear functional relationship between utility and monetary payoffs. In the case of such a linear relationship, maximization of expected monetary values also results in a maximization of expected utility.

<sup>3</sup> See for example R. D. Luce and H. Raiffa, Games and Decisions, John Wiley and Sons, New York, N. Y., 1957 for discussion of such rules as the Laplace principle, Hurwicz principle, maximin or minimax principle, etc.



state of nature which will occur is unknown, probabilities are assigned by the decision-maker to these states to represent likelihood of occurrence. These probabilities may be "objective", for example, based on past relative frequencies or "subjective," representing degrees of belief. In the example given above, if on the basis of his prior knowledge the decision-maker felt that state  $O_1$  had a 0.3 probability of occurrence, whereas state  $O_2$  had a 0.7 probability of occurrence, then the expected utilities of acts  $A_1$  and  $A_2$  would be +34 and -35 respectively and, act  $A_1$ , namely to redevelop the site for office construction would be the preferable act.<sup>1</sup>

It may be noted that the assumption was made above that the decision-maker would be willing to act on the basis of the information given without attempting to obtain any further knowledge concerning outcomes by carrying out some type of experiment. For example, the decision-maker could try to gather data on potential demand for office space on the redeveloped site through the use of a sample survey and to incorporate this empirical information with his prior knowledge in an attempt to make an optimal decision. This type of approach will be discussed subsequently. For the moment, however, we will concentrate on some of the implications of the simple model given above for urban planning type decisions and we will indicate certain data and methodology aspects that might be pertinent in a realistic problem.

The decision problem just discussed was viewed from the standpoint of a single individual (or corporation), the developer. A realistic payoff measure, (a proxy for utility), for the developer could have been the present value of discounted cash flows over the anticipated economic life of the investment or some similar net profit concept. That is, the present value of the stream of costs would be subtracted from the present value of the stream of cash flows utilizing a discount rate which reflected the opportunity cost of capital. Although in this problem, only two alternatives were considered, it is clear that this could be generalized to any finite number of alternatives. Furthermore, other types and larger numbers of states of nature could have been employed to reflect more meaningfully the outcomes upon which the developer's decision to redevelop the site with office construction depended.

Supplementary techniques can be used with this model to give insight into the decision process. One important such technique is sensitivity analysis, in which changes are made in assumptions concerning the

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<sup>1</sup>Expected utility,  $U$ , is obtained by weighting utilities by their probabilities and summing over all states of nature. That is,  $U = \sum_{i=1}^n p_i u_i$ , where  $p_i$  is

the probability of occurrence assigned to the  $i^{\text{th}}$  state of nature,  $u_i$  is the utility associated with the conjunction of the  $i^{\text{th}}$  state of nature and the particular act under consideration. For act  $A_1$ ,  $U(A_1) = (0.3) (-50) + (0.7) (+70) = +34$ , and for act  $A_2$ ,  $U(A_2) = (0.3) (0) + (0.7) (-50) = -35$ .

data which were processed to derive the optimal act, in order to determine how sensitive the choice of this act is to departures from original assumptions. For example, if the subjective probabilities assumed by the decision maker can be changed over a wide range without affecting the choice of act  $A_1$  as the most desirable one, this increases considerably the confidence of the decision maker as to the relative preferability of that act. Also, variations can be introduced in the figures estimated for cash flows and costs, and different discount rates can be utilized in the computing of present values to test the sensitivity of choice of the optimal act. Computer simulation may be an extremely helpful technique in carrying out the large volume of calculations that may be required to perform the sensitivity analysis. In certain situations, known information may be utilized in order to reduce the number of elements over which subjective probability estimates have to be made by the decision maker.

### Combination with Benefit-Cost Analysis

As indicated earlier, the hypothetical decision problem just discussed was considered from the standpoint of a single decision-making body. Benefit-cost analysis derives a set of social accounts which attempts to estimate project implications for all the different parties concerned in a decision for a community. How then can the two types of analysis be combined, or how can one type of analysis be used to supplement the other to bring about improved bases for decision-making? The approach that we feel is called for is to abstract out conceptually manageable portions of the benefit-cost problem and to utilize decision theory on these segments. That is, it is clear that the decision approach should be applied only to problems concerning single producers or consumers. Just as in the benefit-cost analysis itself, data for different decision-making units should not be merged in the analysis. The basic theoretical reason underlying this restriction is the invalidity of interpersonal comparisons of utility. Another point to be made concerning the approach for combining the two types of analysis is that practicability and manageability of the analysis must be considered. It is all too easy to bog the benefit-cost analysis down with large amounts of relatively inconsequential calculation. The suggestion made here is that the decision theory approach should be applied only to particularly critical sections of the benefit-cost table, only to sections in which an economic efficiency criterion can meaningfully be employed and where numerical values are appropriate.

The specific method of use of decision theory in a benefit-cost table is visualized as follows. Consider a numerical entry for benefits (say) for a particular producer. This figure is given as a certainty-equivalent (a single, non-probability estimate). The Bayesian decision theory approach would replace that figure by an expected benefits figure calculated in the same way as expected utility was above. That is, subjective probabilities could be assigned to the states of nature or outcomes upon which the decision primarily depends and estimated payoffs would be appropriately weighted by these judgmental numbers. If feasible, the expert judgments of those who would actually make the decision should be utilized in the derivation of the subjective probabilities. The advantages of having



analysts explicitly think about the outcomes and probabilities of these outcomes upon which estimates are based seem rather clear. Also, there is the advantage of improved opportunity for sensitivity analysis. It must be remembered that although one course of action may be optimal from the expected point of view (on the average), there may be a substantial likelihood of project failure using that course of action. This matter of uncertainty, as indicated at an earlier point, is sometimes dealt with in benefit-cost analyses by showing standard deviations along with benefit-cost ratios. Sensitivity analysis applied together with the decision theory approach appear to us to represent a better set of normative procedures to deal with this intractable yet practical and all-important matter of uncertainty in decision-making. Since benefit-cost analysis by its very nature involves forecasting, it seems desirable to build probabilities and the possible occurrence of various outcomes directly into the decision-making model.

### Incorporation of Additional Information

In the case of many planning and development decisions, the need will obviously be felt to do a substantial amount of research and survey work preparatory to the making of decisions. For example, the authors of the C-E-I-R Federal employment location study noted that it would be impossible to determine a priori how many employees would relocate their residences if their employing agency were to relocate. Sample survey information, however, could provide a reasonably reliable estimate on this matter. Furthermore, sample surveys of personnel records or of personnel were indicated as being required to determine home-to-work travel time, likelihood of relocation, shopping habits, and other characteristic information.<sup>1</sup>

Bayesian decision theory provides a formal method of weighting together the additional sample information with a priori information to obtain revised or posterior probabilities of occurrence of the various states of nature. In the hypothetical illustration given earlier, if two discrete values were assumed for the two possible outcomes  $O_1$  and  $O_2$ , it would be a simple matter to combine the observed sample survey evidence with the a priori subjective probability assignments.<sup>2</sup>

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<sup>1</sup>See C-E-I-R study, *loc. cit.*, pages 23-25.

<sup>2</sup>The calculation would be carried out through the use of Bayes' theorem which gives the posterior probability of the event  $A_v$ , which is one of a partition of events  $A_i$ ,  $i = 1, 2, \dots, n$ . The appearance of one of the  $A_i$  is a necessary condition for the occurrence of another event  $B$ . Knowing the conditional probabilities  $P(B|A_i)$  and the unconditional probabilities  $P(A_i)$ , the posterior probability of  $A_v$  given that  $B$  has occurred is

$$P(A_v|B) = \frac{P(A_v) P(B|A_v)}{\sum_{i=1}^n P(A_i) P(B|A_i)}$$

(continued)



Even the more realistic assumption of a continuous random variable for  $p$ , the percentage of offices rented presents no methodological difficulty although computational details increase.<sup>1</sup> Expected utilities, (or expected

(Footnote continued)

The theorem answers the question, given that event  $B$  has occurred, what is the probability that it was preceded by the event  $A_V$ ? Another point of view is that  $P(A_V|B)$  is the revised probability assignment to event  $A_V$  after observing evidence  $B$ .

<sup>1</sup>For example, the following artificial illustration demonstrates the method involved. A more realistic example would be more complex, but the method would be the same. Assume (1), none of the potential office occupants in a sample of three indicated that he would rent an office on the redeveloped site and (2), a Beta prior probability density function as follows:

$$f(p) = 6p(1-p) \quad ; \quad 0 \leq p \leq 1 \quad .$$

$$\text{Then } f(p|0) = \frac{f(p) f(0|p)}{f(0)} \quad , \quad f(0) > 0 \quad .$$

$$\text{Using } \beta(m, n) = \int_0^1 x^{m-1} (1-x)^{n-1} dx \quad ; \quad m, n > 0$$

$$\text{and } \beta(m, n) = \frac{\Gamma(m) \Gamma(n)}{\Gamma(m+n)}$$

$$\text{gives } f(p|0) = 30p(1-p)^4 \quad ; \quad 0 \leq p \leq 1$$

This is an example of a Beta prior distribution being used together with a binomial conditional distribution to yield a Beta posterior distribution. See H. Raiffa and R. Schlaifer, Applied Statistical Decision Theory, Harvard Business School Press, Cambridge, Mass., 1961 for a discussion of "conjugate distributions."

present values of net cash flows, net profits, etc.) for the various alternative acts can there be computed using the revised or posterior probability estimates as weights rather than the prior probabilities. In summary then, in the benefit-cost analysis illustration, if sample survey information had been utilized the appropriate benefits figure to be entered in the table would be an expected benefits calculation, using the posterior probability weights.

Bayesian decision theory, furthermore, offers procedures for evaluating how much sample information is worth, for evaluating the cost of uncertainty and for the making of decisions which are sequential rather than one time in nature.<sup>1</sup> It does not seem appropriate to elaborate on all of these procedures in this report, but a brief comment will be made on a promising technique using Bayesian decision theory in the making of sequential decisions.

Many of the most important decisions in urban planning and development involve payoffs which are highly uncertain and which stretch out over protracted periods of time. In such situations, what may be called for is not a single one-time "do-or-die" decision, but rather a sequential approach which continually reevaluates whether the projected net-benefit stream warrants going ahead with the particular action(s) contemplated. In a penetrating study, Paul Green has adapted Bayesian decision theory to this type of decision situation for the case of industrial new product development activity.<sup>2</sup> The technique can easily be used and adapted for problems in urban development. In Green's application, he points out that a series of near-term financial outlays must be made in order to gather data about the potential revenue function if commercialization of the product takes place. This means that the manager is "purchasing" information about the variables which affect future payoffs as the product goes through the development process. In the industrial situation, information develops sequentially. For example, a pilot plant may be constructed prior to construction of semi-works. Essentially, Green's method is to apply Bayesian "preposterior" analysis to answer at each stage in a new product's development, the following two questions, "(1) should a decision be made now regarding whether or not to pass the product along to the next development stage vs. terminating the project or should this decision be delayed, pending the receipt of additional information; and (2) given that a decision of when to act has been made, what option should be chosen, viz., "go" vs. "stop" the project?" The specific method of answering these questions will not be belabored here. Suffice it to say that a straightforward Bayesian decision theory approach is used for the multi-stage set of choices in which at each stage the decision maker selects a present strategy which yields the lowest total for expected opportunity costs associated with information collection, delay

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<sup>1</sup>See R. Schlaifer, Probability and Statistics for Business Decisions, McGraw Hill Book Co., New York, N. Y., 1959.

<sup>2</sup>P. E. Green, "Statistical Decision Theory in New Product Development" Chemical Engineering, Fall, 1962.

and action under uncertainty.<sup>1</sup>

Many problems in urban planning and development have a similar formal structure to the industrial problem cited above, particularly with regard to the necessarily sequential nature of decisions required. It is felt that statistical decision theory techniques can be profitably applied to such problems, and that in addition to delivering potential benefits from improved bases for decision, these methods are extremely effective in sharpening the statement of the problem itself at each stage of decision.

### Conclusion

The authors of this paper are painfully aware of the limited and piece-meal nature of the frameworks and techniques for urban economic planning and development discussed in this paper, namely, social accounting, benefit-cost analysis and statistical decision theory. Certainly results must be used cautiously, critically, and with a recognition of the partial nature of the analysis. Much work remains to be done in improving and maturing the analytical methods proposed. Many other techniques and analytical frameworks such as input-output analysis, comparative cost analysis, industrial complex analysis are also pertinent and useful in the examination of metropolitan regional problems. It must be remembered that technical methods for the rationalization of decisions represent but one level of approach to the decision-making process in an urban environment. The practical realities of forces of public administration and organizational structure are crucial in the process. The use of logical apparatuses for decision-making must clearly be accompanied by a wise understanding of the practical methods by which decisions are in fact made in the complicated governmental-private business-public setting of urban planning and development problems. The best justification for the potential contribution of the methods proposed, we feel, is to be found in a paraphrase of a statement by Lichfield in the "with" and "without" spirit of benefit-cost analysis. "Compare the decision-makers' situation in facing complex urban problems with and without the aid of such analyses." We are confident as to where the balance lies.

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<sup>1</sup>For the details of the procedure, see P. Green's paper and R. Schlaifer, op. cit.

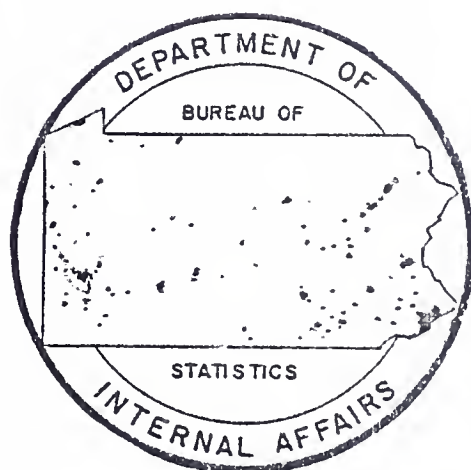




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# PENNSYLVANIA SCIENTIFIC AND TECHNICAL PERSONNEL, 1962

Compiled from unpublished tabulations of the  
National Register of Scientific and Technical  
Personnel, National Science Foundation



Department of Internal Affairs  
Genevieve Blatt, Secretary

Bureau of Statistics  
Emmett H. Welch, Director  
Elmer T. Larson, Asst. Director

MAY 1964

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DOCUMENTS SECTION

# LIST OF PUBLICATIONS PREPARED BY THE BUREAU OF STATISTICS

NOTE: All charge publications should be purchased directly from the Division of Documents, Post Office Box 1763, Harrisburg, Pennsylvania. Pennsylvania residents please add five percent state sales tax to all orders. A check or money order payable to the Commonwealth of Pennsylvania, should accompany each order. Free publications can be obtained directly from the Bureau of Statistics, Department of Internal Affairs, Harrisburg, Pennsylvania.

## A. CHARGE PUBLICATIONS

### 1. 1962 PENNSYLVANIA STATISTICAL ABSTRACT

Statistics, explanatory notes, definitions, and information on statistical sources are presented in 29 subject sections: Population and Income; Housing; Education; Climate; Parks and Recreation; Natural Resources and Conservation; Vital Statistics; Accidents, Hospitals, Medical Care, and Rehabilitation; Mental Health; Welfare Services and Resources; Social Insurance, Financial Assistance, and Veterans' Benefits; Courts and Law, Crime and Law Enforcement; Correction and Parole; Elections, Legislation, and Legislators; State Government; Local Government; Prices; Labor Force, Employment and Earnings; Agriculture; Mineral Industries; Construction; Manufacturing; Transportation; Communications and Public Utilities; Business and Trade, Banking and Finance; Foreign Commerce.

There are 269 tables and 50 graphs and map diagrams, 293 pages. Price \$1.50 plus 8¢ state sales tax. (Copies of the 1958, 1959, 1960, and 1961 Pennsylvania Statistical Abstracts are still available at a price of \$1.00 plus 5¢ state sales tax for the 1958 edition and \$1.50 plus 8¢ state sales tax for the 1959, 1960, and 1961 editions.)

### 2. THE 1962 INDUSTRIAL DIRECTORY OF THE COMMONWEALTH OF PENNSYLVANIA (16th Edition)

Published every three years with supplements for the two years between Directories. County Section - The names of all manufacturing establishments in each county are listed alphabetically within four-digit Standard Industrial Classifications (Revised SIC). The following information is shown for each establishment: plant location, office mailing address (if different than plant location), and number of employees. Industry Section - This section includes an alphabetical listing of all establishments within four-digit Industrial classifications. The county location and the office mailing address is shown for each establishment. 481 pages. Price \$7.50 plus 38¢ state sales tax.

SUPPLEMENT NO. 2 to the 1962 Industrial Directory of the Commonwealth of Pennsylvania. It brings up-to-date in conjunction with Supplement No. 1 the complete listing of manufacturing establishments contained in the 1962 directory. Names, addresses, and employment of establishments beginning operations, those terminating operations, those changing plant locations, and those having changes in their product classification during 1962 are included. 73 pages. Price \$2.00 plus 10¢ state sales tax.

### 3. PENNSYLVANIA MUNICIPAL AUTHORITIES DIRECTORY

Contains the names, addresses, dates of incorporation, and dates and amounts of bond issues for all municipal authorities in Pennsylvania. (1962 edition) Price \$1.00 plus 5¢ state sales tax.

### 4. POPULATION AND AREA OF MUNICIPALITIES IN PENNSYLVANIA (S-9)

County map diagrams showing municipalities with area in square miles and 1950 and 1960 Census population figures. Ward population figures are given for Philadelphia, Pittsburgh, Erie, and Scranton. 70 pages. Price \$1.00 plus 5¢ state sales tax.

## B. FREE PUBLICATIONS

### 5. MANUFACTURING STATISTICS

(Based on the annual Pennsylvania Industrial Census.)

- M-1 1962 Statistics for Manufacturing Industries in Pennsylvania (also, 1958, 1960 and 1961)
  - M-2 1962 Statistics By Major Industry Group for Counties and Urban Places (also 1957)
  - M-3 1962 Statistics for Urbanized Areas (also 1956 to 1960)
  - M-4 1962 General Statistics By Industry and By Size of Establishment (also 1957 to 1960)
  - M-5 (MC-62) 1962 County Industry Reports (Separate report for each county; includes data for political sub-divisions covering 1962 manufacturing statistics for individual industries.) - also 1961
  - M-6 (ET-62) Exports By Pennsylvania Manufacturing Companies: 1962 (also 1961)
  - M-7 Directory of Pennsylvania Manufacturing Exporters: 1963
- This directory to an alphabetical listing of all Pennsylvania manufacturing establishments exporting in 1961, their addresses, and a listing of products exported by each -- also lists all exporting establishments under each manufactured product exported.

### 6. PUBLIC UTILITY STATISTICS

(Based on the annual Census of Public Utilities in Pennsylvania)

- U-1 Statistics for Electric Utilities in Pennsylvania, 1962 (also 1956 to 1960)
- U-2 Statistics for Gas Utilities in Pennsylvania, 1962 (also 1956 to 1961)
- U-3 Statistics for Telephone Utilities in Pennsylvania, 1962 (also 1956 to 1961)
- U-4 Statistics for Water Utilities Including Water Authorities in Pennsylvania, 1962 (also 1956 to 1961)
- U-5 Statistics for Sewer Authorities in Pennsylvania, 1962 (also 1956 to 1961)
- U-6 Statistics for Motor Bus and Electric Transportation Companies in Pennsylvania, 1962 (also 1956 and 1958 to 1960)

### 7. MUNICIPAL AUTHORITY STATISTICS

- A-1 1957 Statistics for Municipal Authorities
- A-1 1958 Statistics for Municipal Authorities
- A-59 1959 Statistics for Municipal Authorities
- A-62 1962 Statistics for Municipal Authorities

### 8. INCOME STATISTICS

- I-1 Pennsylvania's Personal Income by Type and County for Selected Years, 1929-1960

### 9. SPECIAL RELEASES

- S-2 Industrial Statistics for Pennsylvania, 1951 to 1955
- S-5 Mineral Statistics for Pennsylvania, 1957
- S-7 Mineral Statistics for Pennsylvania, 1958-1959
- S-8 Re-apportionment in Pennsylvania
- S-10 Employment Statistics in Pennsylvania for Selected Years: 1919 to 1961
- S-11a Economic Base Studies for Urban Planning and Development in Pennsylvania (A description and evaluation of such studies in Pennsylvania--by Morris Hamburg, University of Pennsylvania)
- S-11b An Evaluation of Selected Data Requirements and Availability for Urban Economic Planning and Development in Pennsylvania -- by Morris Hamburg and John H. Norton, University of Pennsylvania
- S-11c Selected Methods of Analysis for Urban Economic Planning and Development in Pennsylvania: Commentary on Regional Economic Accounting Systems, Benefit-Cost Analysis and Statistical Decision Theory -- by Morris Hamburg and Thomas W. Langford, Jr. Wharton School of Finance and Commerce, University of Pennsylvania
- S-12 (LFC) County Labor Force Report - These reports contain information on employable age population, labor force, unemployment, occupations, and industrial attachment for the cities, boroughs, and townships in fifty-one (51) counties. The data in these reports are not available from any other source. Not included are 16 counties for which similar information is available in the Census Tract publications of the U. S. Bureau of the Census.
- S-13 Pennsylvania Scientific and Technical Personnel, 1962

## C. OUT OF PRINT PUBLICATIONS

These out-of-print publications are listed because copies of many of these reports are available for reference in public, university, and college libraries.

- Pennsylvania Productive Industries - These publications include information on manufacturing, public utilities, and mineral industries for the years 1916 to 1950.
- Directory of Pennsylvania Manufacturing Exporters: 1960 Supplement No. 1 to the 1962 Industrial Directory of the Commonwealth of Pennsylvania
- Index of Statistical Sources for Pennsylvania (Editions in 1955, 1957, 1959, 1960, and 1961)
- P-1 County and City Population Estimates for Pennsylvania
- P-2 County Population Estimates for Penna. by Age and Sex
- P-3 County Population Estimates -- Notes on Methodology
- P-4 Local Population Estimates in Pennsylvania
- S-1 Leading Manufacturing Counties in Pennsylvania
- S-3 Industrial Statistics for Pennsylvania, 1916 to 1956
- S-4 Capital Investment for Manufacturing and Mining Industries in Pennsylvania, 1956
- S-6 Manufacturing Employment in Urban, Suburban, and Rural Places in Pennsylvania, 1960
- 56-5 Shifts in the Geographic Location of Pennsylvania Industry, 1920-1955
- 57-3 Industry Change in Pennsylvania, 1954-1955



## FOREWORD

The Department of Internal Affairs is pleased to present this report on scientific and technical personnel in Pennsylvania and its metropolitan areas. Improving the economic health of the nation, the states, and local areas depends on research and development. Technical advancement, in turn, depends on scientific and technical manpower.

This report contains information on "qualified scientists", defined by the National Register of Scientific and Technical Personnel, upon which this report is based, as those who "have attained professional competence in a field of the sciences as a result of academic training and professional work experience".

This report includes information on the number of scientists in the State and in its Standard Metropolitan Statistical Areas by field of science, major work activity, type of employer, highest degree, salary level, and sex. Comparisons for selected items are also made with the United States and with seven other states with the largest number of scientific and technical personnel.

The Department of Internal Affairs is deeply indebted to the National Register of Scientific and Technical Personnel of the National Science Foundation for providing these data.

A handwritten signature in dark ink, reading "Genevieve Blatt". The signature is fluid and cursive, with the first name "Genevieve" written in a larger, more prominent script than the last name "Blatt".

Genevieve Blatt  
Secretary of Internal Affairs

CONTENTS

	<u>Page</u>
Foreword . . . . .	iii
Introduction . . . . .	1
Purpose and Historical Background . . . . .	1
Registration Process . . . . .	1
Coverage . . . . .	2
Definitions . . . . .	3
Summary . . . . .	7
Statistics for Pennsylvania Scientific and Technical Personnel:	
Table 1 Scientific and Technical Personnel, by Field, and Major Work Activity, United States and Pennsylvania, 1962 . . . . .	11
Table 2 Scientific and Technical Personnel, by Field and Sub-field, United States and Pennsylvania, 1962 . . . . .	12
Table 3 Scientific and Technical Personnel, by Field and Type of Employer, United States and Pennsylvania, 1962. . . . .	13
Table 4 Scientific and Technical Personnel, by Field and Highest Degree, United States and Pennsylvania, 1962 . . . . .	14
Table 5 Comparative Statistics for Eight States with the Largest Number of Scientific and Technical Personnel, 1962 . . . . .	15
Table 6 Pennsylvania Scientific and Technical Personnel, by Standard Metropolitan Statistical Areas and Balance of State, and Field, 1962 . . . . .	17
Table 7 Percentage of Females Among Pennsylvania Scientific and Technical Personnel, by Standard Metropolitan Statistical Areas and Balance of State, and Field, with Comparative Percentages for the United States, 1962 . . . . .	17
Table 8 Pennsylvania Scientific and Technical Personnel, by Standard Metropolitan Statistical Areas and Balance of State, by Major Work Activity, 1962 . . . . .	18
Table 9 Pennsylvania Scientific and Technical Personnel, by Standard Metropolitan Statistical Areas and Balance of State, by Type of Employer, 1962 . . . . .	18
Table 10 Pennsylvania Scientific and Technical Personnel, by Standard Metropolitan Statistical Areas and Balance of State, by Selected Major Work Activities, and Field, 1962 . . . . .	19
Table 11 Pennsylvania Scientific and Technical Personnel, by Selected Standard Metropolitan Statistical Areas, by Major Work Activity, and Field, 1962 . . . . .	21
Table 12 Pennsylvania Scientific and Technical Personnel, by Standard Metropolitan Statistical Areas and Balance of State, by Selected Types of Employers, and Field, 1962 . . . . .	22
Table 13 Pennsylvania Scientific and Technical Personnel, by Standard Metropolitan Statistical Areas and Balance of State, by Highest Degree, and Field, 1962 . . . . .	23
Table 14 Percentage Distribution of Pennsylvania Scientific and Technical Personnel, by Standard Metropolitan Statistical Areas and Balance of State, by Highest Degree, and Field, 1962 . . . . .	24

### Purpose and Historical Background

The National Register of Scientific and Technical Personnel, a comprehensive program for registration of United States scientists, is maintained so that timely information will always be available on the supply, utilization, and professional characteristics of qualified personnel in critical science fields. As first conceived, the primary purpose was to provide a means for identifying and locating individuals with special scientific and engineering skills during periods of full or limited mobilization. The current Register serves also as a source of statistical information useful in estimating supply, level of training, type of work performed, and related data on scientific and technical personnel.

The mobilization activities immediately preceding World War II included the establishment by Executive order in 1940 of the National Roster of Scientific and Specialized Personnel. More than a million American specialists, scientists, and technologists ultimately were registered in it. This Roster was used as a placement service as well as a source of statistical information. Established originally by the National Resources Planning Board and the Civil Service Commission, the Roster was transferred to the War Manpower Commission in 1942. It was again transferred in 1945 to the Department of Labor, where it operated under the United States Employment Service until becoming inactive in 1947.

The Register was re-established in 1950 by the National Science Foundation Act which transferred the Register from the United States Employment Service of the Department of Labor to the National Science Foundation.

### Registration Process

The National Register operates as a cooperative undertaking of the National Science Foundation and the scientific professional societies. Within this framework the Foundation develops common standards and procedures, provides most of the financing, and analyzes findings across discipline lines. Cooperating professional societies are responsible for

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(1) The material in this section is an adaptation, including direct quotation, from The National Register of Scientific and Technical Personnel, and Profiles of Manpower in Science and Technology, National Scientific Foundation, Washington 25, D. C.



identification and location of qualified scientists, determination of eligibility for inclusion, mailing and editing questionnaires, and analysis of data on a discipline basis. As now operating, the Foundation contracts with nine professional scientific societies, each of which is responsible for a specific area of coverage. The nine contractors work with and through about 200 specialized societies in accomplishing this task. Registrations are secured on a voluntary basis by the societies, operating under uniform standards established by the Foundation, e.g., the use of standard questionnaires and specialties lists. The scientific societies circularize individual scientists, members and nonmembers alike, to insure the most complete coverage of eligible personnel possible. Scientists are considered eligible for registration if they have attained professional competence in a field of the sciences as a result of academic training and professional work experience. Since the general level of qualification varies from one field to another, the eligibility for each individual is determined by the society. Information on each scientist is brought up to date at frequent intervals.

### Coverage

#### Scientists

In 1962, fields covered by the National Register include broadly the life and physical sciences. Specifically, agricultural and biological scientists and psychologists are included in the life sciences. Physical science coverage includes chemists, earth scientists, physicists and astronomers, mathematicians and statisticians, meteorologists, and sanitary engineers.

#### Engineers

Engineers, except sanitary, have - in 1962 and previously - not been canvassed for registration. Some persons canvassed in other fields, however, report engineering as their field of greatest professional competence. These individuals, for reporting purposes, are included in the "All other" category.

In 1964 the National Register, with the cooperation of the Engineers Joint Council is undertaking a partial registration of engineers.

These data on a sample population of approximately 100,000 engineers will be used in determining the economic and professional characteristics of the engineering community.

### Social Scientists

As in the case of engineers, some persons canvassed in the physical and life sciences reported one of the social sciences as their field of greatest professional competence. Such persons are included in the "All other" category. To provide more useful data on the social sciences, the 1964 National Register will include the fields of economics, sociology and linguistics.

### Sanitary engineers

The special importance of sanitary engineering to the Government has led to the maintenance of a register in this field similar to those in the basic sciences. This register has been developed by the Public Health Service, which operates in a relationship similar to the cooperating societies in this connection.

### Newly awarded doctorates

The National Academy of Sciences - National Research Council, under contract to the National Science Foundation, maintains a register of scientists awarded doctorates by American universities. Through this mechanism, information is made available each year on new doctorate holders, their fields of specialization, undergraduate and graduate training received, etc.

### Comparability with other data

Inclusion of scientists in the National Register is based on their academic training and professional qualifications. Their number should be distinguished from the number of persons reported to be "working as" scientists in the U. S. Census of Population and by employers in employment surveys. Scientists included in the National Register are by definition and classification a more select group of specialists.

## Definitions

### Field of science

The fields of science included in this report are groups of professional specialties. Each respondent to the questionnaire used to compile the National Register of Scientific and Technical Personnel is asked to report

the specialty in which he considers himself to have greatest professional competence based on education and work experience. These specialties are first classified into sub-fields and then into fields of science. The sub-fields in each field are shown below. In a few cases the specialties in sub-fields are also shown in parentheses. A list of the specialties in each sub-field is shown on "Specialties list for use with National Register of Scientific and Technical Personnel", National Science Foundation, Washington, D. C. 20025.

Agricultural sciences: agronomy, animal husbandry, fish and wild life, forestry and range, horticulture, and soil specialties (soil fertility management; soil bacteriology; soil chemistry; soil genesis, classification, and mapping; soil mechanics and engineering; soil mineralogy; soil conservation; and soil specialties, other).

Biological sciences: anatomy; bacteriology; botany; ecology; entomology; genetics; immunology; nutrition; pathology; pharmacology; physiology; phytopathology; virology; zoology; biophysics; and biological specialties, other.

Psychology: clinical psychology; experimental, comparative, and physiological psychology; counseling and guidance; development psychology; educational psychology; general psychology; industrial and personnel psychology; psychometrics; personality; programmed learning; school psychology; social psychology; and psychology, other.

Earth sciences: geochemistry; geodesy; geology; paleontology and paleobotany; solid-earth geophysics; geography; hydrology; oceanography; and atmospheric, lithospheric, and hydrospheric specialties, other.

Meteorology: atmospheric dynamics, chemistry, and physics; climatology; synoptic meteorology; area specializations (agricultural meteorology, air pollution, aviation meteorology, marine meteorology, polar meteorology, tropical meteorology, and other); and meteorological instrumentation.

Mathematics and statistics: logic; number theory; algebra; analysis and functional analysis; geometry; topology; probability; statistics; numerical methods and computation; mathematics of resource use; and mathematics, other.



Physics and astronomy: theoretical physics; physics of fluids; acoustics; atomic and molecular physics; electromagnetic waves and electron physics; elementary particle physics; mechanics; nuclear structure physics; optics; solid state; thermal phenomena; physics, other; astronomy; and electronics.

Chemistry: analytical chemistry; inorganic chemistry; organic chemistry; physical chemistry; agricultural and food chemistry; biochemistry; and chemistry, other.

Sanitary engineering: (air pollution, insect and rodent control, milk and food sanitation, radiological health engineering, refuse disposal, sewage and industrial wastes, water pollution control, water supply, and other specify).

#### Standard Metropolitan Statistical Areas

A county or a group of contiguous counties which contains at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. In addition to the county or counties containing such a city or cities, contiguous counties are included in a SMSA if they are essentially metropolitan in character and are socially and economically integrated with the central city. If two or more adjacent counties each have a city of 50,000 inhabitants or more and the nearest limits of the cities are within 20 miles of each other, they are included in the same area unless there is definite evidence that the two cities are not economically and socially integrated.

Pennsylvania has 12 standard metropolitan statistical areas. Two of these areas (Allentown-Bethlehem-Easton, and Philadelphia) include counties in New Jersey. The data in this report include only the Pennsylvania portion of these two SMSA's. The following are the counties in each SMSA:

Allentown-Bethlehem-Easton: Lehigh and Northampton  
Altoona: Blair  
Erie: Erie  
Harrisburg: Cumberland and Dauphin

Johnstown: Cambria and Somerset

Lancaster: Lancaster

Philadelphia: Bucks, Chester, Delaware, Montgomery, and  
Philadelphia

Pittsburgh: Allegheny, Beaver, Washington and Westmoreland

Reading: Berks

Scranton: Lackawanna

Wilkes-Barre-Hazleton: Luzerne

York: York

Major Work Activity - Most important kind of activity, in terms of  
working time devoted.

Basic Research

Applied Research: applied research, clinical research and  
investigation; equipment or systems research and  
psychological test development.

Development and design

Management and Administration of R & D

Management and Administration of other than R & D

Production and Inspection: production, quality control, inspec-  
tion, sales, and marketing.

Type of Employer - Principal employer

Educational Institutions: college or university, medical schools  
and secondary school or school system.

Federal Government: Civilian employees

Other Government: state, county, municipal and other govern-  
mental agencies

Private industry and business: includes self-employed.

Other: non-profit organization, military, United States Public  
Health Service Commissioned Corps, and miscel-  
laneous.

Scientific Field and Major Work Activity, United States and Pennsylvania, 1962 (Table 1)

The number of scientific and technical personnel in Pennsylvania in 1962 was 12,517 -- 6 per cent of the national total of 214,960. About 34 per cent of Pennsylvania's scientists were in the field of chemistry (4,301). This is the field in which Pennsylvania had the largest proportion of the national total, 8 per cent.

Pennsylvania had 6 per cent of the nation's total in each of the following fields: biological sciences, psychology, physics and astronomy, and sanitary engineering.

Pennsylvania was relatively under-represented in the following fields: agricultural sciences (3 per cent of the national total), earth sciences (2 per cent), and meteorology (2 per cent).

Nearly 5,000, or 40 per cent of Pennsylvania's scientists were engaged in research, development, and design as their major type of work activity -- 7 per cent of the national total. In management and administration, teaching, and production and inspection, Pennsylvania had 6 per cent of the national total.

Pennsylvania had the same proportion, 6 per cent, of scientists engaged in basic research as it had of all scientists. It had a larger proportion, 7 per cent, of the nation's scientists engaged in applied research, and 8 per cent of those engaged in development and design.

Scientific Field and Sub-field, United States and Pennsylvania, 1962 (Table 2)

The highest ratios of Pennsylvania's scientific and technical personnel to the national total were in the sub-fields of ceramic engineering (15 per cent), metallurgy and metallurgical engineering (13 per cent), pharmacology (10 per cent), and virology (10 per cent). The lowest ratios (1 per cent of the national total) were in fish and wild life, geodesy, area specialization, and paleontology and paleobotany.

Scientific Field and Type of Employer, United States and Pennsylvania, 1962, (Table 3)

Nearly 7,000, or 56 per cent of Pennsylvania's scientists were engaged in private industry and business --- 7 per cent of the national total.



Pennsylvania was under-represented in Federal Government (3 per cent) and in other government ( 4 per cent).

Scientific Field and Highest Degree, United States and Pennsylvania, 1962  
(Table 4)

Among all scientists, Pennsylvania had about the same proportion with a doctor's degree(35 per cent) as did the nation (33 per cent). Among earth scientists, Pennsylvania had a much larger proportion with a doctor's degree (28 per cent) as compared with (17 per cent) for the United States. In meteorology, the proportions were 12 per cent with a doctor's degree in Pennsylvania and 7 per cent in the nation. For both Pennsylvania and the United States, the proportions with a doctor's degree were highest in biological sciences (69 and 68 per cent) and in psychology (58 and 62 per cent). The proportions were lowest in sanitary engineering (3 and 5 per cent).

Comparative Statistics for Eight States with the Largest Number of Scientific and Technical Personnel, 1962 (Table 5)

Pennsylvania ranked third among the eight states in both population and number of scientific and technical personnel, being exceeded only by New York and California.

Pennsylvania ranked fifth in the number of scientific and technical personnel per million estimated population (1, 102). States ranking higher were New Jersey (1,847), Massachusetts (1,684), California (1,504), and New York (1,350). Ohio ranked lowest with 972.

Among the fields of science, Pennsylvania had the following ranks in number of scientists per million of population: third in chemistry; fifth in agricultural sciences, biological sciences, earth sciences, and physics and astronomy; sixth in psychology, mathematics and statistics, and sanitary engineering.

Pennsylvania ranked fourth -- behind Massachusetts, New York, and Illinois -- in proportion of scientists and technicians with a doctor's degree.

### Scientific and Technical Personnel by Standard Metropolitan Statistical Areas, 1962 (Tables 6 and 8-14)

Of the State's 12,517 scientific and technical personnel, 10,540 or 84 per cent were in the 12 Standard Metropolitan Statistical Areas. The balance of the State had 1,977 or 16 per cent of the total.

The Philadelphia Standard Metropolitan Statistical Area (SMSA) had 5,644 or 45 per cent of the State's scientific and technical personnel in 1962. The Pittsburgh SMSA was second with 3,205 or 26 per cent and the Allentown-Bethlehem-Easton SMSA third with 512 or 4 per cent. The Standard Metropolitan Statistical Areas with the smallest number of scientists were Altoona (39 or 0.3 per cent), Johnstown (45 or 0.4 per cent), and Scranton (50 or 0.4 per cent).

### Women Scientists (Table 7)

Women scientists were 8 per cent of the total in the State, 16 per cent of those in the Johnstown SMSA, 13 per cent in the Erie and the Wilkes-Barre - Hazleton SMSA's, 12 per cent in the Scranton SMSA, and only 4 per cent in the Allentown-Bethlehem-Easton SMSA.

Among the fields of science, 24 per cent were women in psychology, 14 per cent in the biological sciences, and 11 per cent in mathematics and statistics.

### Median Salaries

The median basic annual salary rate as of January 1, 1962 for all scientific and technical personnel and for all males was \$10,000 for both Pennsylvania and the United States. The median for all females was \$8,000 for both Pennsylvania and the United States.

The following are the median salaries by fields for Pennsylvania and the United States:

Field	Median basic annual salary rate	
	Pennsylvania	United States
Total	\$10,000	\$10,000
Agricultural sciences	8,000	8,000
Biological sciences	10,000	10,000
Psychology	9,000	9,000
Earth sciences	9,000	10,000
Meteorology	8,000	8,000
Mathematics and statistics	10,000	10,000
Physics and astronomy	10,000	11,000
Chemistry	10,000	10,000
Sanitary engineering	10,000	10,000
All other	10,000	10,000

The following are the median salaries for the United States, the eight states with the largest number of scientific and technical personnel, the District of Columbia, and Delaware:

State	Median salary
United States	\$10,000
Pennsylvania	10,000
New York	10,000
California	10,000
Illinois	10,000
Massachusetts	10,000
Ohio	10,000
Texas	10,000
New Jersey	11,000
District of Columbia	11,000
Delaware	13,000



TABLE 1: SCIENTIFIC AND TECHNICAL PERSONNEL, BY FIELD, AND MAJOR WORK ACTIVITY, UNITED STATES AND PENNSYLVANIA: 1962

Field and major work activity	United States	Pennsylvania	Percent Pennsylvania to U. S.	Field and major work activity	United States	Pennsylvania	Percent Pennsylvania to U. S.
Total	214,940	12,517	6	Mathematics and statistics	18,189	889	5
Research, development and design	75,679	4,990	7	Research, development and design	5,912	267	5
Basic research	32,744	1,927	6	Basic research	1,446	50	3
Applied research	31,382	2,129	7	Applied research	2,995	136	5
Development and design	11,553	934	8	Development and design	1,471	81	6
Management and administration	48,226	2,770	6	Management and administration	3,631	145	4
Research and development	27,852	1,641	6	Research and development	2,019	78	4
Other	20,374	1,129	6	Other	1,612	67	4
Teaching	33,907	2,018	6	Teaching	5,297	330	6
Production and inspection	18,778	1,215	6	Production and inspection	1,586	78	5
Other	38,350	1,524	4	Other	1,763	69	4
Agricultural sciences	12,389	331	3	Physics and astronomy	25,725	1,588	6
Research, development and design	3,286	74	2	Research, development and design	14,122	877	6
Basic research	1,063	22	2	Basic research	7,212	407	6
Applied research	2,140	49	2	Applied research	4,480	285	6
Development and design	83	3	4	Development and design	2,430	185	8
Management and administration	6,174	164	3	Management and administration	4,470	282	6
Research and development	3,621	82	2	Research and development	3,598	225	6
Other	2,553	82	3	Other	872	57	7
Teaching	1,013	39	4	Teaching	5,145	322	6
Production and inspection	320	12	4	Production and inspection	947	61	6
Other	1,596	42	3	Other	1,041	46	4
Biological sciences	25,554	1,461	6	Chemistry	54,130	4,301	8
Research, development and design	11,334	651	6	Research, development and design	24,557	2,106	9
Basic research	7,461	403	5	Basic research	11,200	843	8
Applied research	3,789	237	6	Applied research	10,420	976	9
Development and design	84	11	13	Development and design	2,937	287	10
Management and administration	3,519	180	5	Management and administration	13,179	1,057	8
Research and development	2,206	103	5	Research and development	9,076	728	8
Other	1,313	77	6	Other	4,103	329	8
Teaching	7,420	423	6	Teaching	5,687	369	6
Production and inspection	455	30	7	Production and inspection	7,949	582	7
Other	2,826	177	6	Other	2,758	187	7
Psychology	16,791	977	6	Sanitary engineering	4,923	290	6
Research, development and design	4,469	254	6	Research, development and design	812	49	6
Basic research	1,362	64	5	Basic research	86	6	7
Applied research	2,959	180	6	Applied research	194	9	5
Development and design	148	10	7	Development and design	532	34	6
Management and administration	2,590	165	6	Management and administration	1,421	79	6
Research and development	995	55	6	Research and development	310	13	4
Other	1,595	110	7	Other	1,111	66	6
Teaching	3,689	212	6	Teaching	247	9	4
Production and inspection	56	2	4	Production and inspection	737	51	7
Other	5,987	344	6	Other	1,706	102	6
Earth sciences	18,725	467	2	All other (1)	33,135	2,117	6
Research, development and design	2,672	102	4	Research, development and design	7,547	586	8
Basic research	1,550	64	4	Basic research	906	52	6
Applied research	1,106	36	3	Applied research	2,805	216	8
Development and design	16	2	13	Development and design	3,836	318	8
Management and administration	2,552	58	2	Management and administration	9,607	629	7
Research and development	1,209	32	3	Research and development	4,471	322	7
Other	1,343	26	2	Other	5,136	307	6
Teaching	2,361	130	6	Teaching	2,840	175	6
Production and inspection	960	26	3	Production and inspection	5,707	372	7
Other	10,180	151	1	Other	7,434	355	5
Meteorology	5,379	96	2				
Research, development and design	968	24	2				
Basic research	458	16	3				
Applied research	494	5	1				
Development and design	16	3	19				
Management and administration	1,083	11	1				
Research and development	347	3	1				
Other	736	8	1				
Teaching	208	9	4				
Production and inspection	61	1	2				
Other	3,059	51	2				

(1) Includes engineering other than sanitary, social sciences, humanities, and other specialties.

Source: National Science Foundation, National Register of Scientific and Technical Personnel, 1962.

TABLE 2: SCIENTIFIC AND TECHNICAL PERSONNEL, BY FIELD AND SUB-FIELD, UNITED STATES AND PENNSYLVANIA: 1962

Field and sub-field	United States	Pennsylvania	Percent Pennsylvania to U. S.	Field and sub-field	United States	Pennsylvania	Percent Pennsylvania to U. S.
Total	214,940	11,517	6	Mathematics and statistics	18,189	889	5
Agricultural sciences	12,389	331	3	Algebra	1,243	55	4
Agronomy	1,047	28	3	Analysis and functional analysis	2,262	133	6
Animal husbandry	832	26	3	Geometry	690	33	5
Fish and wildlife	1,765	26	1	Logic	408	27	7
Forestry and range	6,799	198	3	Mathematics of resource use	3,838	158	4
Horticulture	804	32	4	Mathematics, other	854	51	6
Soil specialties	1,142	21	2	Number theory	324	19	6
Biological sciences	25,554	1,461	6	Numerical methods and computation	4,973	227	5
Anatomy	972	57	6	Probability	393	12	3
Bacteriology	2,714	181	7	Statistics	2,758	155	6
Biology, other	3,502	214	6	Topology	446	19	4
Biophysics	1,081	68	6	Physics and astronomy	25,725	1,588	6
Botany	1,871	72	4	Acoustics	1,454	89	6
Ecology	927	31	3	Astronomy	826	30	4
Entomology	1,756	42	2	Atomic and molecular physics	1,092	35	3
Genetics	1,022	48	5	Electromagnetic waves and electron physics	1,945	103	5
Immunology	881	67	8	Electronics	3,799	248	7
Nutrition	1,057	31	3	Elementary particle physics	1,024	44	4
Pathology	1,304	88	7	Mechanics	1,161	80	7
Pharmacology	1,671	160	10	Nuclear structure physics	2,986	167	6
Physiology	2,927	212	7	Optics	2,137	114	5
Phytopathology	857	25	3	Physics of fluids	1,278	57	4
Virology	675	66	10	Physics, other	1,861	118	6
Zoology	2,337	99	4	Solid state	4,215	365	9
Psychology	16,791	977	6	Theoretical physics	1,286	77	6
Clinical psychology	6,207	361	6	Thermal phenomena	661	61	9
Counseling and guidance	1,979	114	6	Chemistry	54,130	4,301	8
Developmental psychology	463	16	3	Agriculture and food chemistry	3,418	134	4
Educational psychology	1,342	75	6	Analytical chemistry	8,418	711	8
Experimental, comparative, and physiological psychology	2,117	130	6	Bio-chemistry	5,648	362	6
General psychology	175	13	7	Chemistry, other	1,554	117	8
Industrial and personnel psychology	1,691	122	7	Inorganic chemistry	3,956	347	9
Personality	528	29	5	Organic chemistry	23,779	1,993	8
Programmed learning	89	6	7	Physical chemistry	7,357	637	9
Psychology, other	163	8	5	Sanitary engineering	4,923	290	6
Psychometrics	510	26	5	Sanitary engineering	4,923	290	6
School psychology	761	41	5	All other	33,135	2,117	6
Social psychology	766	36	5	Aeronautical engineering	822	27	3
Earth sciences	18,725	467	2	Ceramic engineering	468	70	15
Atmospheric, lithospheric, and hydrospheric specialties, others	30	-	-	Chemical engineering	6,842	527	8
Geochemistry	333	31	9	Civil engineering	5,089	202	4
Geodesy	365	5	1	Electrical engineering	928	59	6
Geography	1,087	63	6	Engineering mechanics	679	35	5
Geology	11,778	262	2	Industrial engineering	1,826	85	5
Hydrology	1,138	29	3	Mechanical engineering	802	59	7
Oceanography	563	9	2	Metallurgy and metallurgical engineering	1,201	152	13
Paleontology and paleobotany	809	12	1	Mining and petroleum engineering	1,255	51	4
Solid earth geophysics	2,622	56	2	Other engineering	4,993	412	8
Meteorology	5,379	96	2	Photogrammetry, photo-inter-pretation, cartography	2,144	68	3
Area specializations	967	13	1	Social sciences, humanities, and other specialties	6,086	370	6
Atmospheric dynamics, chemistry and physics	669	18	3				
Climatology	227	5	2				
Meteorological instrumentation	234	8	3				
Synoptic meteorology	3,282	52	2				

Source: National Science Foundation, National Register of Scientific and Technical Personnel, 1962.

TABLE 3: SCIENTIFIC AND TECHNICAL PERSONNEL, BY FIELD AND TYPE OF EMPLOYER, UNITED STATES AND PENNSYLVANIA: 1962

Field and type of employer	United States	Pennsylvania	Percent Pennsylvania to U. S.	Field and type of employer	United States	Pennsylvania	Percent Pennsylvania to U. S.
Total	214,940	12,517	6	Mathematics and statistics	18,189	889	5
Educational institutions	60,319	3,555	6	Educational institutions	6,824	391	6
Federal government	24,962	633	3	Federal government	1,637	32	2
Other government	12,031	490	4	Other government	488	25	5
Private industry and business (1)	95,895	6,876	7	Private industry and business (1)	7,577	419	6
Other (2)	21,734	963	4	Other (2)	1,663	22	1
Agricultural sciences	12,389	331	3	Physics and astronomy	25,725	1,588	6
Educational institutions	2,904	96	3	Educational institutions	9,314	606	7
Federal government	4,460	69	2	Federal government	2,891	79	3
Other government	2,089	92	4	Other government	104	2	2
Private industry and business (1)	2,428	66	3	Private industry and business (1)	10,062	797	8
Other (2)	508	8	2	Other (2)	3,354	104	3
Biological sciences	25,554	1,461	6	Chemistry	54,130	4,301	8
Educational institutions	14,221	816	6	Educational institutions	11,180	734	7
Federal government	2,812	40	1	Federal government	3,456	216	6
Other government	1,570	43	3	Other government	932	22	2
Private industry and business (1)	3,616	334	9	Private industry and business (1)	35,256	3,064	9
Other (2)	3,335	228	7	Other (2)	3,306	265	8
Psychology	16,791	977	6	Sanitary engineering	4,923	290	6
Educational institutions	7,653	448	6	Educational institutions	362	13	4
Federal government	1,536	61	4	Federal government	296	6	2
Other government	2,308	133	6	Other government	1,644	80	5
Private industry and business (1)	2,839	171	6	Private industry and business (1)	2,053	178	9
Other (2)	2,455	164	7	Other (2)	568	13	2
Earth sciences	18,725	467	2	All other (3)	33,135	2,117	6
Educational institutions	3,421	181	5	Educational institutions	3,990	242	6
Federal government	2,515	24	1	Federal government	3,620	83	2
Other government	752	22	3	Other government	2,078	69	3
Private industry and business (1)	10,549	204	2	Private industry and business (1)	20,969	1,628	8
Other (2)	1,488	36	2	Other (2)	2,478	95	4
Meteorology	5,379	96	2				
Educational institutions	450	28	6				
Federal government	1,739	23	1				
Other government	66	2	3				
Private industry and business (1)	546	15	3				
Other (2)	2,578	28	1				

(1) Includes self-employed.

(2) Includes non-profit organizations, miscellaneous, and not specified.

(3) Includes engineering other than sanitary, social sciences, humanities, and other specialties.

Source: National Science Foundation, National Register of Scientific and Technical Personnel, 1962.



TABLE 4: SCIENTIFIC AND TECHNICAL PERSONNEL, BY FIELD AND HIGHEST DEGREE, UNITED STATES AND PENNSYLVANIA: 1962

Field and highest degree	United States		Pennsylvania		Field and highest degree	United States		Pennsylvania	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
Total	214,940	100	12,517	100	Mathematics and statistics	18,189	100	889	100
Doctor's degree	71,826	33	4,343	35	Doctor's degree (1)	4,443	24	211	24
Ph. D.	66,133	31	3,937	32	Master's degree	7,566	42	417	47
Professional Medical	5,693	2	406	3	Bachelor's degree	5,738	32	245	27
Master's degree	56,660	26	3,217	26	Less than Bachelor's degree	402	2	14	2
Bachelor's degree	78,574	37	4,531	36	All other	40	*	2	*
Less than Bachelor's degree	5,767	3	237	2	Physics and astronomy	25,725	100	1,588	100
All other	2,113	1	189	1	Doctor's degree (1)	9,112	35	519	33
Agricultural sciences	12,389	100	331	100	Master's degree	7,957	31	505	32
Doctor's degree	2,365	19	72	22	Bachelor's degree	8,197	32	544	34
Master's degree	3,122	25	84	25	Less than Bachelor's degree	395	2	14	1
Bachelor's degree	6,620	53	171	52	All other	64	*	6	*
Less than Bachelor's degree	181	2	3	1	Chemistry	54,130	100	4,301	100
All other	101	1	1	*	Doctor's degree (1)	19,990	37	1,509	35
Biological sciences	25,554	100	1,461	100	Master's degree	11,078	20	816	19
Doctor's degree	17,443	68	1,007	69	Bachelor's degree	21,752	40	1,829	43
Ph. D.	12,380	48	649	44	Less than Bachelor's degree	363	1	43	1
Professional Medical	5,063	20	358	25	All other	947	2	104	2
Master's degree	4,686	18	253	17	Sanitary engineering	4,923	100	290	100
Bachelor's degree	3,103	12	176	12	Doctor's degree (1)	229	5	9	3
Less than Bachelor's degree	172	1	14	1	Master's degree	1,660	34	85	29
All other	150	1	11	1	Bachelor's degree	2,761	56	174	60
Psychology	16,791	100	977	100	Less than Bachelor's degree	175	3	17	6
Doctor's degree (1)	10,357	62	562	58	All other	98	2	5	2
Master's degree	5,701	34	367	38	All other (2)	33,135	100	2,117	100
Bachelor's degree	678	4	42	4	Doctor's degree (1)	4,283	13	309	15
Less than Bachelor's degree	25	*	4	*	Master's degree	8,330	25	519	24
All other	30	*	2	*	Bachelor's degree	17,897	54	1,134	54
Earth sciences	18,725	100	467	100	Less than Bachelor's degree	2,066	6	101	5
Doctor's degree (1)	3,227	17	133	28	All other	559	2	54	2
Master's degree	5,543	29	152	33					
Bachelor's degree	9,326	50	174	37					
Less than Bachelor's degree	535	3	5	1					
All other	94	1	3	1					
Meteorology	5,379	100	96	100					
Doctor's degree (1)	377	7	12	12					
Master's degree	1,017	19	19	20					
Bachelor's degree	2,502	46	42	44					
Less than Bachelor's degree	1,453	27	22	23					
All other	30	1	1	1					

\* Less than 1/2 percent.

(1) Includes Ph. D. or equivalent degrees and professional medical degrees.

(2) Includes engineering other than sanitary, social sciences, humanities, and other specialties.

Source: National Science Foundation, National Register of Scientific and Technical Personnel, 1962.

TABLE 5: COMPARATIVE STATISTICS FOR EIGHT STATES WITH THE LARGEST  
NUMBER OF SCIENTIFIC AND TECHNICAL PERSONNEL: 1962

Item	New York	Cali- fornia	Pennsyl- vania	Illinois	Texas	Ohio	New Jersey	Massa- chusetts
Estimated population (thousands)	17,402	16,970	11,376	10,246	10,146	10,097	6,245	5,161
Rank	1	2	3	4	5	6	7	8
Farm population 1960 (thousands)	325	334	356	563	594	520	51	36
Rank	6	5	4	2	1	3	7	8
Total scientific and technical personnel	23,496	25,526	12,517	10,790	11,000	9,816	11,549	8,694
Rank	2	1	3	6	5	7	4	8
Number per million estimated population	1,350	1,504	1,100	1,063	1,087	972	1,847	1,684
Rank	4	3	5	7	6	8	1	2
<u>Field</u>								
Agricultural sciences	381	1,097	331	248	404	205	131	116
Rank	3	1	4	5	2	5	7	8
Number per million 1960 farm population	1,172	3,284	930	440	582	394	2,569	3,222
Rank	4	1	5	7	6	8	3	2
Biological sciences	2,935	2,593	1,461	1,565	773	911	791	1,025
Rank	1	2	4	3	8	6	7	5
Number per million population	169	153	128	154	76	90	127	199
Rank	2	4	5	3	8	7	5	1
Psychology	2,849	2,238	977	947	493	833	734	742
Rank	1	2	3	4	8	5	7	6
Number per million population	164	132	86	93	49	82	118	144
Rank	1	3	6	5	8	7	4	2
Earth sciences	628	2,066	467	465	3,632	394	178	298
Rank	3	2	4	5	1	6	8	7
Number per million population	36	122	41	46	359	39	29	58
Rank	7	2	5	4	1	6	8	3
Meteorology	411	626	96	203	253	83	108	255
Rank	2	1	7	5	4	8	6	3
Number per million population	24	37	8	20	25	8	17	49
Rank	4	2	7	5	3	8	6	1
Mathematics and statistics	2,438	2,936	889	846	566	691	877	931
Rank	2	1	4	6	8	7	5	3
Number per million population	140	173	78	83	56	68	140	180
Rank	4	2	6	5	8	7	3	1
Physics and astronomy	3,322	4,552	1,588	1,107	761	1,056	1,483	1,810
Rank	2	1	4	6	8	7	5	3
Number per million population	191	268	140	109	71	105	237	351
Rank	4	2	5	6	8	7	3	1
Chemistry	6,221	4,542	4,301	3,521	2,020	3,577	5,292	2,229
Rank	1	3	4	6	8	5	2	7
Number per million population	357	268	376	347	200	354	847	432
Rank	4	7	3	6	8	5	1	2
Sanitary engineering	503	511	290	315	211	306	145	167
Rank	2	1	5	3	6	4	8	7
Number per million population	29	30	25	31	21	30	23	32
Rank	5	4	6	2	8	3	7	1
All other (1)	3,808	4,365	2,117	1,573	1,887	1,760	1,810	1,121
Rank	2	1	3	7	4	6	5	8
Number per million population	219	257	186	155	187	174	290	217
Rank	3	2	6	8	5	7	1	4
<u>Major work activity</u>								
Research, development and design	8,598	9,995	4,990	3,955	2,584	3,615	5,160	3,869
Rank	2	1	4	5	8	7	3	6
Number per million population	494	589	439	390	255	358	826	750
Rank	4	3	5	6	8	7	1	2
Basic research	3,656	4,239	1,927	1,896	926	1,253	1,687	2,036
Rank	2	1	4	5	8	7	6	3
Number per million population	210	250	169	187	92	124	270	394
Rank	4	3	6	5	8	7	2	1
Applied research	3,344	4,089	2,129	1,594	1,248	1,674	2,366	1,290
Rank	2	1	4	6	8	5	3	7
Number per million population	192	241	187	157	123	166	379	250
Rank	4	3	5	7	8	6	1	2
Development and design	1,598	1,667	934	465	410	688	1,107	543
Rank	2	1	4	7	8	5	3	6
Number per million population	92	98	82	46	41	68	177	105
Rank	4	3	5	7	8	6	1	2

(continued on following page)

TABLE 5: (continued)

Item	New York	California	Pennsylvania	Illinois	Texas	Ohio	New Jersey	Massachusetts
Management and administration	5,160	5,681	2,770	2,251	2,067	2,275	3,056	1,702
Rank	2	1	4	6	7	5	3	8
Number per million population	297	335	243	222	204	225	489	330
Rank	4	2	5	7	8	6	1	3
Research and development	2,807	3,392	1,641	1,277	946	1,447	2,090	1,130
Rank	2	1	4	6	8	5	3	7
Number per million population	161	200	144	126	94	143	335	219
Rank	4	3	5	7	8	6	1	2
Other	2,353	2,289	1,129	974	1,121	828	966	572
Rank	1	2	3	5	4	7	6	8
Number per million population	135	135	99	96	111	82	155	111
Rank	2	3	6	7	5	8	1	4
Teaching	3,587	3,351	2,018	1,956	1,283	1,585	871	1,501
Rank	1	2	3	4	7	5	8	6
Number per million population	206	197	177	193	127	157	139	291
Rank	2	3	5	4	8	6	7	1
Production and inspection	2,190	1,844	1,215	1,158	1,424	1,034	1,348	545
Rank	1	2	5	6	3	7	4	8
Number per million population	126	109	107	114	141	102	216	106
Rank	3	5	6	4	2	8	1	7
Other, including not specified	3,961	4,655	1,524	1,470	3,642	1,307	1,114	1,077
Rank	2	1	4	5	3	6	7	8
Number per million population	228	274	134	145	360	129	178	209
Rank	3	2	7	6	1	8	5	4
<u>Type of employer</u>								
Private industry and business (2)	12,095	11,118	6,876	4,811	7,165	4,842	8,656	3,539
Rank	1	2	5	7	4	6	3	8
Number per million population	695	655	604	474	708	480	1,386	686
Rank	3	5	6	8	2	7	1	4
Educational institutions	6,734	6,690	3,555	3,570	2,068	2,533	1,564	3,164
Rank	1	2	4	3	7	6	8	5
Number per million population	387	394	313	352	204	251	250	613
Rank	3	2	5	4	8	6	7	1
Federal government	732	2,454	633	578	632	866	431	588
Rank	3	1	4	7	5	2	8	6
Number per million population	42	145	56	57	62	86	69	114
Rank	8	1	7	6	5	3	4	2
Other government	1,337	1,976	490	592	340	523	285	254
Rank	2	1	5	3	6	4	7	8
Number per million population	77	116	43	58	34	52	46	49
Rank	2	1	7	3	8	4	6	5
Military	470	728	88	184	346	266	117	173
Rank	2	1	8	5	3	4	7	6
Number per million population	27	43	8	18	34	26	19	34
Rank	4	1	8	7	3	5	6	2
Other (3)	2,128	2,560	875	1,055	449	786	496	976
Rank	2	1	5	3	8	6	7	4
Number per million population	122	151	77	104	44	78	79	189
Rank	3	2	7	4	8	6	5	1
<u>Percentage distribution by highest degree</u>								
	U. S.							
Total	100	100	100	100	100	100	100	100
Doctor's degree (4)	33	38	33	35	21	31	34	41
Master's degree	26	27	25	26	26	27	26	28
Bachelor's degree	37	32	37	36	49	39	37	28
Less than bachelor's degree and not specified	4	3	4	3	4	3	3	3

(1) Includes engineering other than sanitary, social sciences, humanities, and other specialties.

(2) Includes self-employed.

(3) Includes non-profit organizations, miscellaneous, and not specified.

(4) Includes Ph.D. or equivalent degrees and professional medical degrees.

Source: National Science Foundation, National Register of Scientific and Technical Personnel, 1962.



TABLE 6: PENNSYLVANIA SCIENTIFIC AND TECHNICAL PERSONNEL, BY STANDARD METROPOLITAN STATISTICAL AREAS AND BALANCE OF STATE, AND FIELD: 1962

Area	Total	Agri- cultural sciences	Bio- logical sciences	Psy- chology	Earth sciences	Meteor- ology	Mathe- matics, statis- tics	Physics and astronomy	Chemis- try	Sanitary engineer- ing	All other (1)
State total	12,517	331	1,461	977	467	96	889	1,588	4,301	290	2,117
Allentown-Bethlehem-Easton (2)	512	8	25	30	30	-	36	90	173	6	114
Altoona	39	2	5	10	1	-	1	2	8	4	6
Erie	118	2	10	10	6	-	10	9	46	5	20
Harrisburg	319	27	25	27	23	18	29	19	45	37	69
Johnstown	45	4	5	4	1	-	4	2	15	1	9
Lancaster	297	3	19	14	12	2	14	53	134	4	42
Philadelphia (2)	5,644	69	927	465	71	26	428	649	2,047	96	866
Pittsburgh	3,205	17	220	214	173	11	207	488	1,137	82	656
Reading	165	1	12	11	7	1	8	16	60	15	34
Scranton	50	2	3	6	2	-	5	9	14	1	8
Wilkes-Barre-Hazleton	77	4	7	17	-	2	8	13	16	2	8
York	69	2	4	4	1	-	5	6	22	6	19
Balance of State	1,977	190	199	165	140	36	134	232	584	31	266

(1) Includes engineering other than sanitary, social sciences, humanities, and other specialties.

(2) Pennsylvania portion.

Source: National Science Foundation, National Register of Scientific and Technical Personnel, 1962.

TABLE 7: PERCENTAGE OF FEMALES AMONG PENNSYLVANIA SCIENTIFIC AND TECHNICAL PERSONNEL, BY STANDARD METROPOLITAN STATISTICAL AREAS AND BALANCE OF STATE, AND FIELD, WITH COMPARATIVE PERCENTAGES FOR THE UNITED STATES: 1962

Area	Total	Agri- cultural sciences	Bio- logical sciences	Psy- chology	Earth sciences	Meteor- ology	Mathe- matics, statis- tics	Physics and astronomy	Chem- istry	Sanitary engineer- ing	All other (1)
State total	8	1	14	24	3	2	11	3	7	1	3
Allentown-Bethlehem-Easton (2)	4	-	16	27	-	-	-	2	3	-	-
Altoona	8	-	20	10	-	-	-	50	-	-	-
Erie	13	-	20	20	17	-	40	-	9	-	-
Harrisburg	7	-	16	22	4	-	24	11	2	-	1
Johnstown	16	-	20	-	100	-	25	-	27	-	-
Lancaster	6	-	11	21	8	-	21	-	4	-	5
Philadelphia (2)	9	1	14	24	1	4	12	4	9	-	4
Pittsburgh	7	-	17	23	3	-	8	3	7	1	2
Reading	7	-	8	36	29	-	-	6	5	-	3
Scranton	12	-	33	17	-	-	20	-	21	-	-
Wilkes-Barre-Hazleton	13	-	29	29	-	-	12	8	6	-	-
York	10	-	75	75	-	-	20	-	-	-	-
Balance of State	6	1	11	24	2	3	10	2	4	-	3
United States	7	1	12	22	3	1	11	3	7	1	3

(1) Includes engineering other than sanitary, social sciences, humanities, and other specialties.

(2) Pennsylvania portion.

Source: National Science Foundation, National Register of Scientific and Technical Personnel, 1962.

TABLE 8: PENNSYLVANIA SCIENTIFIC AND TECHNICAL PERSONNEL, BY STANDARD METROPOLITAN STATISTICAL AREAS AND BALANCE OF STATE, BY MAJOR WORK ACTIVITY: 1962

Area	Research, development, and design					Management and administration			Teaching	Production and inspection	Other including not specified
	Total	Total	Basic research	Applied research	Development and design	Total	Research and development	Other			
State total	12,517	4,990	1,927	2,129	934	2,770	1,641	1,129	2,018	1,215	1,524
Allentown-Bethlehem-Easton (1)	512	156	43	76	37	99	61	38	148	54	59
Altoona	39	5	1	2	2	7	1	6	9	9	6
Erie	118	30	2	21	7	29	16	13	37	9	13
Harrisburg	319	46	12	19	15	99	41	58	46	34	94
Johnstown	45	1	-	1	-	12	1	11	19	7	6
Lancaster	297	120	20	51	49	76	54	22	54	34	13
Philadelphia (1)	5,644	2,410	951	1,012	447	1,266	773	493	757	550	661
Pittsburgh	3,205	1,456	561	643	252	716	446	270	345	295	393
Reading	165	42	3	24	15	40	25	15	33	24	26
Scranton	50	8	1	1	6	13	7	6	22	4	3
Wilkes-Barre-Hazleton	77	10	2	5	3	14	8	6	33	6	14
York	69	13	1	5	7	15	8	7	12	12	17
Balance of State	1,977	693	330	269	94	384	200	184	503	177	220

(1) Pennsylvania portion.

Source: National Science Foundation, National Register of Scientific and Technical Personnel, 1962.

TABLE 9: PENNSYLVANIA SCIENTIFIC AND TECHNICAL PERSONNEL, BY STANDARD METROPOLITAN STATISTICAL AREAS AND BALANCE OF STATE, BY TYPE OF EMPLOYER: 1962

Area	Total	Educational institutions	Federal government	Other government	Private industry and business (1)	Other (2)
State total	12,517	3,555	637	486	6,876	963
Allentown-Bethlehem-Easton (3)	512	190	-	16	283	23
Altoona	39	13	2	5	18	1
Erie	118	47	-	2	64	5
Harrisburg	319	53	25	116	99	26
Johnstown	45	19	-	5	16	5
Lancaster	297	58	-	5	223	11
Philadelphia (3)	5,644	1,399	376	146	3,237	486
Pittsburgh	3,205	716	127	48	2,026	288
Reading	165	34	1	9	108	13
Scranton	50	26	4	-	17	3
Wilkes-Barre-Hazleton	77	34	8	5	22	8
York	69	13	-	2	50	4
Balance of state	1,977	953	94	127	713	90

(1) Includes self-employed.

(2) Includes non-profit organizations, miscellaneous, and not specified.

(3) Pennsylvania portion.

Source: National Science Foundation, National Register of Scientific and Technical Personnel, 1962.

TABLE 10: PENNSYLVANIA SCIENTIFIC AND TECHNICAL PERSONNEL, BY STANDARD METROPOLITAN STATISTICAL AREAS AND BALANCE OF STATE, BY SELECTED MAJOR WORK ACTIVITIES, AND FIELD: 1962

Area and selected major work activities	Total	Agri-cultural sciences	Bio-logical sciences	Psy-chology	Earth sciences	Meteor-ology	Mathe-matics, statis-tics	Physics and astronomy	Chem-istry	Sanitary engineer-ing	All other (1)
State total	12,517	331	1,461	977	467	96	889	1,588	4,301	290	2,117
Research, development, and design	4,990	74	651	254	102	24	267	877	2,106	49	586
Management and administration of research and development	1,641	82	103	55	32	3	78	225	728	13	322
Teaching	2,018	39	423	212	130	9	330	322	369	9	175
All other (2)	3,868	136	284	456	203	60	214	164	1,098	219	1,034
Allentown-Bethlehem-Easton (3)	512	8	25	30	30	-	36	90	173	6	114
Research, development, and design	156	1	2	6	7	-	2	40	69	2	27
Management and administration of research and development	61	1	-	-	2	-	-	9	38	-	11
Teaching	148	-	18	15	14	-	28	29	27	-	17
All other (2)	147	6	5	9	7	-	6	12	39	4	59
Altoona	39	2	5	10	1	-	1	2	8	4	6
Research, development, and design	5	-	-	1	-	-	-	-	1	1	2
Management and administration of research and development	1	-	-	-	-	-	-	-	1	-	-
Teaching	9	-	4	1	-	-	1	2	-	-	1
All other (2)	24	2	1	8	1	-	-	-	6	3	3
Erie	118	2	10	10	6	-	10	9	46	5	20
Research, development, and design	30	1	1	3	-	-	1	3	17	1	3
Management and administration of research and development	16	-	-	1	1	-	-	1	11	1	1
Teaching	37	-	6	3	5	-	7	4	7	-	5
All other (2)	35	1	3	3	-	-	2	1	11	3	11
Harrisburg	319	27	25	27	23	18	29	19	45	37	69
Research, development, and design	46	4	-	4	5	-	4	4	16	3	6
Management and administration of research and development	41	8	3	3	2	-	7	3	2	1	12
Teaching	46	2	11	3	4	-	9	8	7	-	2
All other (2)	186	13	11	17	12	18	9	4	20	33	49
Johnstown	45	4	5	4	1	-	4	2	15	1	9
Research, development, and design	1	-	-	1	-	-	-	-	-	-	-
Management and administration of research and development	1	1	-	-	-	-	-	-	-	-	-
Teaching	19	-	3	1	1	-	4	2	8	-	-
All other (2)	24	3	2	2	-	-	-	-	7	1	9
Lancaster	297	3	19	14	12	2	14	53	134	4	42
Research, development, and design	120	1	2	1	-	1	1	30	71	-	13
Management and administration of research and development	54	1	2	1	-	-	-	10	31	1	8
Teaching	54	-	13	4	9	-	12	6	7	-	3
All other (2)	69	1	2	8	3	1	1	7	25	3	18
Philadelphia (3)	5,644	69	927	465	71	26	428	649	2,047	96	866
Research, development, and design	2,410	8	471	138	10	6	156	349	1,031	14	227
Management and administration of research and development	773	24	73	32	3	2	46	109	355	6	123
Teaching	757	11	206	84	23	2	104	130	132	1	64
All other (2)	1,704	26	177	211	35	16	122	61	529	75	452
Pittsburgh	3,205	17	220	214	173	11	207	488	1,137	82	656
Research, development, and design	1,456	5	95	63	48	-	77	326	600	17	225
Management and administration of research and development	446	6	16	11	16	-	19	63	189	2	124
Teaching	345	-	68	35	13	1	60	60	72	3	33
All other (2)	958	6	41	105	96	10	51	39	276	60	274
Reading	165	1	12	11	7	1	8	16	60	15	34
Research, development, and design	42	-	1	1	-	-	1	6	25	2	6
Management and administration of research and development	25	-	-	-	1	-	1	1	15	-	7
Teaching	33	-	7	3	6	-	2	5	6	-	4
All other (2)	65	1	4	7	-	1	4	4	14	13	17
Scranton	50	2	3	6	2	-	5	9	14	1	8
Research, development, and design	8	-	-	1	-	-	1	3	-	-	3
Management and administration of research and development	7	1	-	-	-	-	-	-	5	-	1
Teaching	22	-	3	2	-	-	2	6	7	-	2
All other (2)	13	1	-	3	2	-	2	-	2	1	2

(continued on following page)



TABLE 10: (continued)

Area and selected major work activities	Total	Agri-cultural sciences	Bio-logical sciences	Psy-chology	Earth sciences	Meteor-ology	Mathe-matics, statis-tics	Physics and astronomy	Chem-istry	Sanitary engineer-ing	All other (1)
Wilkes-Barre-Hazleton	77	4	7	17	-	2	8	13	16	2	8
Research, development, and design	10	2	-	3	-	-	-	1	3	-	1
Management and administration of research and development	8	1	-	-	-	-	-	2	5	-	-
Teaching	33	1	5	5	-	1	8	7	5	-	1
All other (2)	26	-	2	9	-	1	-	3	3	2	6
York	69	2	4	4	1	-	5	6	22	6	19
Research, development, and design	13	-	-	-	-	-	1	2	4	2	4
Management and administration of research and development	8	-	-	-	1	-	-	1	3	1	2
Teaching	12	-	3	-	-	-	4	1	3	-	1
All other	36	2	1	4	-	-	-	2	12	3	12
Balance of State	1,977	190	199	165	140	36	134	232	584	31	266
Research, development, and design	693	52	79	32	32	17	23	113	269	7	69
Management and administration of research and development	200	39	9	7	6	1	5	26	73	1	33
Teaching	503	25	76	56	55	5	89	62	88	5	42
All other (2)	581	74	35	70	47	13	17	31	154	18	122

(1) Includes engineering other than sanitary, social sciences, humanities, and other specialties.

(2) Includes management and administration other than research and development, production and inspection, miscellaneous, and not specified.

(3) Pennsylvania portion.

Source: National Science Foundation, National Register of Scientific and Technical Personnel, 1962.

TABLE 11: PENNSYLVANIA SCIENTIFIC AND TECHNICAL PERSONNEL, BY SELECTED STANDARD METROPOLITAN STATISTICAL AREAS, BY MAJOR WORK ACTIVITY, AND FIELD: 1962

Selected standard metropolitan areas	Total	Agri- cultural sciences	Bio- logical sciences	Psy- chology	Earth sciences	Meteor- ology	Mathe- matics, statist- ics	Physics and astronomy	Chem- istry	Sanitary engineer- ing	All other (1)
State total	12,517	331	1,461	977	467	96	889	1,588	4,301	290	2,117
Research, development and design	4,990	74	651	254	102	24	267	877	2,106	49	586
Basic research	1,927	22	403	64	64	16	50	407	843	6	52
Applied research	2,129	49	237	180	36	5	136	285	976	9	216
Development and design	934	3	11	10	2	3	81	185	287	34	318
Management and administration	2,770	164	180	165	58	11	145	282	1,057	79	629
Research and development	1,641	82	103	55	32	3	78	225	728	13	322
Other	1,129	82	77	110	26	8	67	57	329	66	307
Teaching	2,018	39	423	212	130	9	330	322	369	9	175
Production and inspection	1,215	12	30	2	26	1	78	61	582	51	372
Other, including not specified	1,524	42	177	344	151	51	69	46	187	102	355
Allentown-Bethlehem-Easton, total (2)	512	8	25	30	30	-	36	90	173	6	114
Research, development and design	156	1	2	6	7	-	2	40	69	2	27
Basic research	43	1	1	1	5	-	-	11	22	-	2
Applied research	76	-	1	5	2	-	2	15	39	1	11
Development and design	37	-	-	-	-	-	-	14	8	1	14
Management and administration	99	5	-	1	3	-	1	12	48	1	28
Research and development	61	1	-	-	2	-	-	9	38	-	11
Other	38	4	-	1	1	-	1	3	10	1	17
Teaching	148	-	18	15	14	-	28	29	27	-	17
Production and inspection	54	1	1	-	1	-	4	6	20	1	20
Other, including not specified	55	1	4	8	5	-	1	3	9	2	22
Harrisburg, total	319	27	25	27	23	18	29	19	45	37	69
Research, development and design	46	4	-	4	5	-	4	4	16	3	6
Basic research	12	-	-	-	5	-	-	1	4	-	2
Applied research	19	3	-	4	-	-	-	2	7	-	3
Development and design	15	1	-	-	-	-	4	1	5	3	1
Management and administration	99	17	10	7	4	2	11	5	8	9	26
Research and development	41	8	3	3	2	-	7	3	2	1	12
Other	58	9	7	4	2	2	4	2	6	8	14
Teaching	46	2	11	3	4	-	9	8	7	-	2
Production and inspection	34	1	2	-	-	1	5	1	10	5	9
Other, including not specified	94	3	2	13	10	15	-	1	4	20	26
Philadelphia, total (2)	5,644	69	927	465	71	26	428	649	2,047	96	866
Research, development and design	2,410	8	471	138	10	6	156	349	1,031	14	227
Basic research	951	1	285	28	7	1	28	150	433	2	16
Applied research	1,012	7	179	102	3	3	71	109	470	2	66
Development and design	447	-	7	8	-	2	57	90	128	10	145
Management and administration	1,266	36	117	80	7	5	86	128	508	36	263
Research and development	773	24	73	32	3	2	46	109	355	6	123
Other	493	12	44	48	4	3	40	19	153	30	140
Teaching	757	11	206	84	23	2	104	130	132	1	64
Production and inspection	550	2	13	2	9	-	40	25	264	28	167
Other, including not specified	661	12	120	161	22	13	42	17	112	17	145
Pittsburgh, total	3,205	17	220	214	173	11	207	488	1,137	82	656
Research, development and design	1,456	5	95	63	48	-	77	326	600	17	225
Basic research	561	3	68	26	22	-	16	176	229	2	19
Applied research	643	1	27	36	25	-	48	107	307	2	90
Development and design	252	1	-	1	1	-	13	43	64	13	116
Management and administration	716	9	28	36	28	1	31	80	276	19	208
Research and development	446	6	16	11	16	-	19	63	189	2	124
Other	270	3	12	25	12	1	12	17	87	17	84
Teaching	345	-	68	35	13	1	60	60	72	3	33
Production and inspection	295	1	4	-	8	-	20	7	152	10	93
Other, including not specified	393	2	25	80	76	9	19	15	37	33	97

(1) Includes engineering other than sanitary, social sciences, humanities, and other specialties.

(2) Pennsylvania portion.

Source: National Science Foundation, National Register of Scientific and Technical Personnel, 1962.

TABLE 12. PENNSYLVANIA SCIENTIFIC AND TECHNICAL PERSONNEL, BY STANDARD METROPOLITAN STATISTICAL AREAS AND BALANCE OF STATE, BY SELECTED TYPES OF EMPLOYERS, AND FIELD: 1962

Area and selected type of employer	Total	Agri- cultural sciences	Bio- logical sciences	Psy- chology	Earth sciences	Meteor- ology	Mathe- matics, statis- tics	Physics and astronomy	Chem- istry	Sanitary engineer- ing	All other (1)
State total	12,517	331	1,461	977	467	96	889	1,588	4,301	290	2,117
Private industry and business (2)	6,876	66	334	171	204	15	419	797	3,064	178	1,628
Educational institutions	3,555	96	816	448	181	28	391	606	734	13	242
All other (3)	2,086	169	311	358	82	53	79	185	503	99	247
Allentown-Bethlehem-Easton (4)	512	8	25	30	30	-	36	90	173	6	114
Private industry and business (2)	283	3	3	1	9	-	7	44	126	4	86
Educational institutions	190	1	19	20	18	-	27	42	42	-	21
All other (3)	39	4	3	9	3	-	2	4	5	2	7
Altoona	39	2	5	10	1	-	1	2	8	4	6
Private industry and business (2)	18	2	-	1	-	-	-	-	7	4	4
Educational institutions	13	-	4	3	1	-	1	2	1	-	1
All other (3)	8	-	1	6	-	-	-	-	-	-	1
Erie	118	2	10	10	6	-	10	9	46	5	20
Private industry and business (2)	64	1	2	-	1	-	2	4	37	4	13
Educational institutions	47	1	7	8	5	-	8	5	7	-	6
All other (3)	7	-	1	2	-	-	-	-	2	1	1
Harrisburg	319	27	25	27	23	18	29	19	45	37	69
Private industry and business (2)	99	2	2	2	2	-	2	5	31	18	35
Educational institutions	53	2	11	6	4	1	11	9	7	-	2
All other (3)	167	23	12	19	17	17	16	5	7	19	32
Johnstown	45	4	5	4	1	-	4	2	15	1	9
Private industry and business (2)	16	2	1	-	-	-	-	-	5	1	7
Educational institutions	19	-	2	1	1	-	4	2	8	-	1
All other (3)	10	2	2	3	-	-	-	-	2	-	1
Lancaster	297	3	19	14	12	2	14	53	134	4	42
Private industry and business (2)	223	2	6	2	2	1	2	45	122	3	38
Educational institutions	58	1	13	7	9	-	11	7	7	-	3
All other (3)	16	-	-	5	1	1	1	1	5	1	1
Philadelphia (4)	5,644	69	927	465	71	26	428	649	2,047	96	866
Private industry and business (2)	3,237	14	269	114	28	9	255	319	1,494	58	677
Educational institutions	1,399	12	455	185	28	3	129	214	286	1	86
All other (3)	1,008	43	203	166	15	14	44	116	267	37	103
Pittsburgh	3,205	17	220	214	173	11	207	488	1,137	82	656
Private industry and business (2)	2,026	8	24	39	130	3	117	284	817	60	544
Educational institutions	716	2	140	96	19	1	83	163	160	4	48
All other (3)	463	7	56	79	24	7	7	41	160	18	64
Reading	165	1	12	11	7	1	8	16	60	15	34
Private industry and business (2)	108	-	3	-	1	-	5	10	52	10	27
Educational institutions	34	-	7	5	6	-	2	5	6	-	3
All other (3)	23	1	2	6	-	1	1	1	2	5	4
Scranton	50	2	3	6	2	-	5	9	14	1	8
Private industry and business (2)	17	-	-	-	2	-	2	3	5	-	5
Educational institutions	26	-	3	5	-	-	3	6	7	-	2
All other (3)	7	2	-	1	-	-	-	-	2	1	1
Wilkes-Barre-Hazleton	77	4	7	17	-	2	8	13	16	2	8
Private industry and business (2)	22	1	2	1	-	-	-	4	8	-	6
Educational institutions	34	1	4	4	-	1	8	8	7	-	1
All other (3)	21	2	1	12	-	1	-	1	1	2	1
York	69	2	4	4	1	-	5	6	22	6	19
Private industry and business (2)	50	2	1	1	1	-	1	5	16	6	17
Educational institutions	13	-	3	-	-	-	4	1	4	-	1
All other (3)	6	-	-	3	-	-	-	-	2	-	1
Balance of State	1,977	190	199	165	140	36	134	232	584	31	266
Private industry and business (2)	713	29	21	10	28	2	26	74	344	10	169
Educational institutions	953	76	148	108	90	22	100	142	192	8	67
All other (3)	311	85	30	47	22	12	8	16	48	13	30

(1) Includes engineering other than sanitary, social sciences, humanities, and other specialties.

(2) Includes self-employed.

(3) Includes government, non-profit organizations, miscellaneous, and not specified.

(4) Pennsylvania portion.

Source: National Science Foundation, National Register of Scientific and Technical Personnel, 1962.



TABLE 13: PENNSYLVANIA SCIENTIFIC AND TECHNICAL PERSONNEL, BY STANDARD METROPOLITAN STATISTICAL AREAS AND BALANCE OF STATE, BY HIGHEST DEGREE, AND FIELD: 1962

Area and highest degree	Total	Agri- cultural sciences	Bio- logical sciences	Psy- chology	Earth sciences	Meteor- ology	Mathe- matics, statis- tics	Physics and astronomy	Chem- istry	Sanitary engineer- ing	All other (1)
State total	12,517	331	1,461	977	467	96	889	1,588	4,301	290	2,117
Doctor's degree (2)	4,328	72	1,007	562	133	12	211	519	1,509	9	309
Master's degree	3,217	84	253	367	152	19	417	505	816	85	519
All other (3)	4,972	175	201	48	182	65	261	564	1,976	196	1,289
Allentown-Bethlehem-Easton, total (4)	512	8	25	30	30	-	36	90	173	6	114
Doctor's degree (2)	179	-	12	19	14	-	16	32	67	1	19
Master's degree	147	2	10	11	7	-	18	34	32	-	33
All other (3)	186	6	3	-	9	-	2	24	74	5	62
Altoona, total	39	2	5	10	1	-	1	2	8	4	6
Doctor's degree (2)	8	-	-	5	-	-	1	-	2	-	-
Master's degree	13	-	3	5	-	-	-	2	2	-	1
All other (3)	18	2	2	-	1	-	-	-	4	4	5
Erie, total	118	2	10	10	6	-	10	9	46	5	20
Doctor's degree (2)	25	-	5	3	2	-	1	-	13	-	2
Master's degree	41	1	2	5	2	-	9	5	9	1	7
All other (3)	52	1	3	2	2	-	-	4	24	4	11
Harrisburg, total	319	27	25	27	23	18	29	19	45	37	69
Doctor's degree (2)	58	5	11	10	5	-	3	6	10	-	10
Master's degree	91	7	8	17	11	1	13	4	8	9	13
All other (3)	170	15	6	-	7	17	13	9	27	28	46
Johnstown, total	45	4	5	4	1	-	4	2	15	1	9
Doctor's degree (2)	9	-	2	2	1	-	1	-	3	-	-
Master's degree	13	-	-	2	-	-	1	2	7	-	1
All other (3)	23	4	3	-	-	-	2	-	5	1	8
Lancaster, total	297	3	19	14	12	2	14	53	134	4	42
Doctor's degree (2)	83	1	9	9	7	-	4	13	37	-	5
Master's degree	85	2	7	4	4	-	7	16	32	3	10
All other (3)	129	-	3	1	1	2	3	24	65	1	27
Philadelphia, total (4)	5,644	69	927	465	71	26	428	649	2,047	96	866
Doctor's degree (2)	2,095	15	687	259	18	3	80	179	758	2	94
Master's degree	1,397	19	117	181	16	6	185	227	386	31	229
All other (3)	2,152	35	123	25	37	17	163	243	903	63	543
Pittsburgh, total	3,205	17	220	214	173	11	207	488	1,137	82	656
Doctor's degree (2)	1,131	3	153	143	38	1	59	205	404	3	122
Master's degree	768	3	45	59	61	2	100	132	189	23	154
All other (3)	1,306	11	22	12	74	8	48	151	544	56	380
Reading, total	165	1	12	11	7	1	8	16	60	15	34
Doctor's degree (2)	26	-	5	6	2	-	-	4	8	-	2
Master's degree	46	1	3	5	2	-	4	3	15	5	8
All other (3)	93	-	4	-	3	1	4	9	37	10	24
Scranton, total	50	2	3	6	2	-	5	9	14	1	8
Doctor's degree (2)	11	-	3	2	-	-	1	2	3	-	-
Master's degree	20	-	-	4	2	-	2	3	5	-	4
All other (3)	19	2	-	-	-	-	2	4	6	1	4
Wilkes-Barre-Hazleton, total	77	4	7	17	-	2	8	13	16	2	8
Doctor's degree (2)	18	-	6	6	-	-	1	2	5	-	-
Master's degree	30	3	-	10	-	1	6	6	4	-	-
All other (3)	29	1	1	1	-	1	1	5	7	2	8
York, total	69	2	4	4	1	-	5	6	22	6	19
Doctor's degree (2)	3	-	-	-	-	-	-	-	-	1	2
Master's degree	19	-	1	4	1	-	4	1	5	1	2
All other (3)	47	2	3	-	-	-	1	5	17	4	15
Balance of State, total	1,977	190	199	165	140	36	134	232	584	31	266
Doctor's degree (2)	682	48	14	98	46	8	44	76	199	2	53
Master's degree	547	46	57	60	46	9	68	70	122	12	57
All other (3)	748	96	28	7	48	19	22	86	263	17	156

(1) Includes engineering other than sanitary, social sciences, humanities, and other specialties.

(2) Includes Ph.D. or equivalent degrees and professional medical degrees.

(3) Includes bachelor's degree, less than bachelor's degree, and not specified.

(4) Pennsylvania portion.

Source: National Science Foundation, National Register of Scientific and Technical Personnel, 1962.

TABLE 14. PERCENTAGE DISTRIBUTION OF PENNSYLVANIA SCIENTIFIC AND TECHNICAL PERSONNEL, BY STANDARD METROPOLITAN STATISTICAL AREAS AND BALANCE OF STATE, BY HIGHEST DEGREE, AND FIELD: 1962

Area and highest degree	Total	Agri- cultural sciences	Bio- logical sciences	Psy- chology	Earth sciences	Meteor- ology	Mathe- matics, statistics	Physics and astronomy	Chem- istry	Sanitary engineer- ing	All other (1)
State total	100	100	100	100	100	100	100	100	100	100	100
Doctor's degree (2)	35	22	69	57	28	12	24	33	35	3	15
Master's degree	26	25	17	38	33	20	47	32	19	29	24
All other (3)	39	53	14	5	39	68	29	35	46	68	61
Allentown-Bethlehem-Easton (4)	100	100	100	100	100	-	100	100	100	100	100
Doctor's degree (2)	35	-	48	63	47	-	44	36	39	17	17
Master's degree	29	25	40	37	23	-	50	38	18	-	29
All other (3)	36	75	12	-	30	-	6	26	43	83	54
Altoona	100	100	100	100	100	-	100	100	100	100	100
Doctor's degree (2)	21	-	-	50	-	-	100	-	25	-	-
Master's degree	33	-	60	50	-	-	-	100	25	-	17
All other (3)	46	100	40	-	100	-	-	-	50	100	83
Erie	100	100	100	100	100	-	100	100	100	100	100
Doctor's degree (2)	21	-	50	30	34	-	10	-	28	-	10
Master's degree	35	50	20	50	33	-	90	56	20	20	35
All other (3)	44	50	30	20	33	-	-	44	52	80	55
Harrisburg	100	100	100	100	100	100	100	100	100	100	100
Doctor's degree (2)	18	19	44	37	22	-	10	32	22	-	14
Master's degree	29	26	32	63	48	6	45	21	18	24	19
All other (3)	53	55	24	-	30	94	45	47	60	76	67
Johnstown	100	100	100	100	100	-	100	100	100	100	100
Doctor's degree (2)	20	-	40	50	100	-	25	-	20	-	-
Master's degree	29	-	-	50	-	-	25	100	47	-	11
All other (3)	51	100	60	-	-	-	50	-	33	100	89
Lancaster	100	100	100	100	100	100	100	100	100	100	100
Doctor's degree (2)	28	33	47	64	58	-	29	25	28	-	12
Master's degree	29	67	37	29	33	-	50	30	24	75	24
All other (3)	43	-	16	7	9	100	21	45	48	25	64
Philadelphia (4)	100	100	100	100	100	100	100	100	100	100	100
Doctor's degree (2)	37	22	74	56	25	12	19	28	37	2	11
Master's degree	25	27	13	39	23	23	43	35	19	32	26
All other (3)	38	51	13	5	52	65	38	37	44	66	63
Pittsburgh	100	100	100	100	100	100	100	100	100	100	100
Doctor's degree (2)	35	18	70	67	22	9	29	42	36	4	19
Master's degree	24	18	20	28	35	18	48	27	16	28	23
All other (3)	41	64	10	5	43	73	23	31	48	68	58
Reading	100	100	100	100	100	100	100	100	100	100	100
Doctor's degree (2)	16	-	42	55	29	-	-	25	13	-	6
Master's degree	28	100	25	45	29	-	50	19	25	33	24
All other (3)	56	-	33	-	42	100	50	56	62	67	70
Scranton	100	100	100	100	100	-	100	100	100	100	100
Doctor's degree (2)	22	-	100	33	-	-	20	22	21	-	-
Master's degree	40	-	-	67	100	-	40	33	36	-	50
All other (3)	38	100	-	-	-	-	40	45	43	100	50
Wilkes-Barre-Hazleton	100	100	100	100	100	100	100	100	100	100	100
Doctor's degree (2)	23	-	86	35	-	-	13	15	31	-	-
Master's degree	39	75	-	59	-	50	74	46	25	-	-
All other (3)	38	25	14	6	-	50	13	39	44	100	100
York	100	100	100	100	100	100	100	100	100	100	100
Doctor's degree (2)	4	-	-	-	-	-	-	-	-	17	11
Master's degree	28	-	25	100	100	-	80	17	23	17	11
All other (3)	68	100	75	-	-	-	20	83	77	66	78
Balance of State	100	100	100	100	100	100	100	100	100	100	100
Doctor's degree (2)	34	25	57	59	33	22	33	33	34	6	20
Master's degree	28	24	29	37	33	25	51	30	21	39	21
All other (3)	38	51	14	4	34	53	16	37	45	55	59

(1) Includes engineering other than sanitary, social sciences, humanities, and other specialties.

(2) Includes Ph. D. or equivalent degrees and professional medical degrees.

(3) Includes bachelor's degree, less than bachelor's degree, and not specified.

(4) Pennsylvania portion.

Source: National Science Foundation, National Register of Scientific and Technical Personnel, 1962.

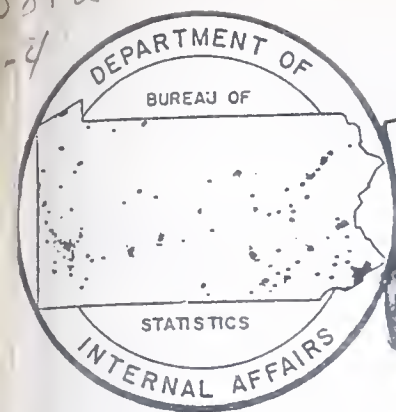






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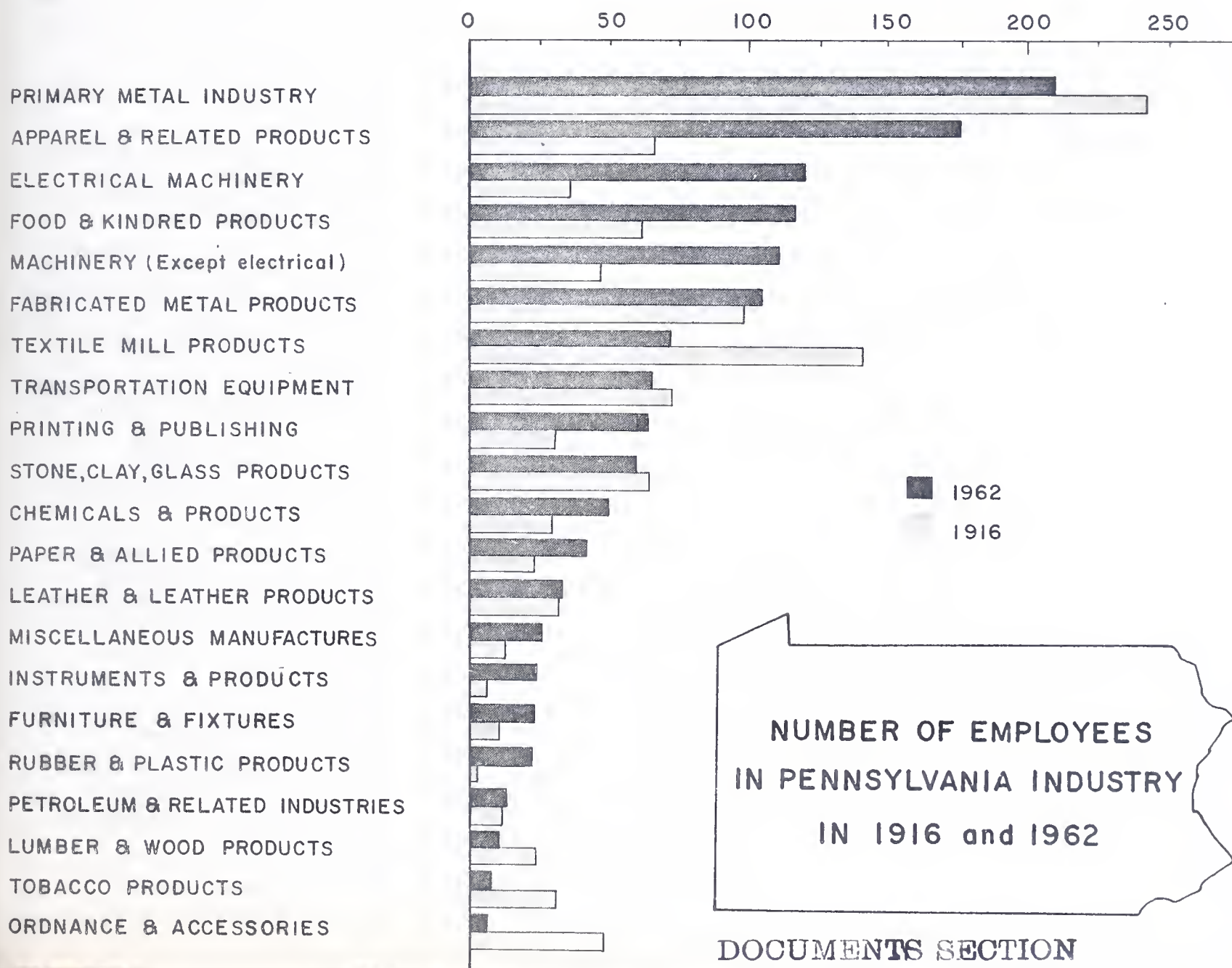
DEPARTMENT OF  
INTERNAL AFFAIRS  
Genevieve Blatt, Secretary

BUREAU OF STATISTICS  
Emmett Welch, Director  
Elmer Larson, Asst. Director

JUNE 1964

SPECIAL RELEASE NO. S-14

## COMPARABLE STATISTICS FOR MANUFACTURING INDUSTRIES IN PENNSYLVANIA : 1916 - 1962



NUMBER OF EMPLOYEES  
IN PENNSYLVANIA INDUSTRY  
IN 1916 and 1962

DOCUMENTS SECTION



# LIST OF PUBLICATIONS PREPARED BY THE BUREAU OF STATISTICS

NOTE: All charge publications should be purchased directly from the Division of Documents, Post Office Box 1763, Harrisburg, Pennsylvania. Pennsylvania residents please add five percent state sales tax to all orders. A check or money order payable to the Commonwealth of Pennsylvania, should accompany each order. Free publications can be obtained directly from the Bureau of Statistics, Department of Internal Affairs, Harrisburg, Pennsylvania.

## A. CHARGE PUBLICATIONS

### 1. 1963 PENNSYLVANIA STATISTICAL ABSTRACT

Statistics, explanatory notes, definitions, and information on statistical sources are presented in 29 subject sections: Population and Income; Housing; Education; Climate; Parks and Recreation; Natural Resources and Conservation; Vital Statistics; Accidents, Hospitals, Medical Care, and Rehabilitation; Mental Health; Welfare Services and Resources; Social Insurance; Financial Assistance, and Veterans' Benefits; Courts and Law; Crime and Law Enforcement, Correction and Parole, Elections, Legislation, and Legislators, State Government; Local Government; Prices; Labor Force, Employment and Earnings, Agriculture; Mineral Industries; Construction; Manufacturing, Transportation; Communications and Public Utilities; Business and Trade; Banking and Finance; Foreign Commerce.

There are 269 tables and 50 graphs and map diagrams, 293 pages. Price \$1.50 plus 8¢ state sales tax. (Copies of the 1958, 1959, 1960, and 1961 Pennsylvania Statistical Abstracts are still available at a price of \$1.00 plus 5¢ state sales tax for the 1958 edition and \$1.50 plus 8¢ state sales tax for the 1959, 1960, and 1961 editions.)

### 2. THE 1962 INDUSTRIAL DIRECTORY OF THE COMMONWEALTH OF PENNSYLVANIA (16th Edition)

Published every three years with supplements for the two years between Directories. County Section - The names of all manufacturing establishments in each county are listed alphabetically within four-digit Standard Industrial Classifications (Revised SIC). The following information is shown for each establishment: plant location, office mailing address (if different than plant location), and number of employees. Industry Section - This section includes an alphabetical listing of all establishments within four-digit industrial classifications. The county location and the office mailing address is shown for each establishment. 481 pages. Price \$7.50 plus 38¢ state sales tax.

SUPPLEMENT NO. 2 to the 1962 Industrial Directory of the Commonwealth of Pennsylvania. It brings up-to-date in conjunction with Supplement No. 1 the complete listing of manufacturing establishments contained in the 1962 directory. Names, addresses, and employment of establishments beginning operations, those terminating operations, those changing plant locations, and those having changes in their product classification during 1962 are included. 73 pages. Price \$2.00 plus 10¢ state sales tax.

### 3. PENNSYLVANIA MUNICIPAL AUTHORITIES DIRECTORY

Contains the names, addresses, dates of incorporation, and dates and amounts of bond issues for all municipal authorities in Pennsylvania. (1962 edition) Price \$1.00 plus 5¢ state sales tax.

### 4. POPULATION AND AREA OF MUNICIPALITIES IN PENNSYLVANIA (S-9)

County map diagrams showing municipalities with area in square miles and 1950 and 1960 Census population figures. Ward population figures are given for Philadelphia, Pittsburgh, Erie, and Scranton. 70 pages. Price \$1.00 plus 5¢ state sales tax.

## B. FREE PUBLICATIONS

### 5. MANUFACTURING STATISTICS

(Based on the annual Pennsylvania Industrial Census.)

- M-1 1962 Statistics for Manufacturing Industries in Pennsylvania (also, 1958, 1960 and 1961)
- M-2 1962 Statistics By Major Industry Group for Counties and Urban Places (also 1957)
- M-3 1962 Statistics for Urbanized Areas (also 1956 to 1960)
- M-4 1962 General Statistics By Industry and By Size of Establishment (also 1957 to 1960)
- M-5 (MC-63) 1963 County Industry Reports (Separate report for each county; includes data for political sub-divisions covering 1963 manufacturing statistics for individual industries.) - also 1961
- M-6 (FT-62) Exports By Pennsylvania Manufacturing Companies: 1962 (also 1961)
- M-7 Directory of Pennsylvania Manufacturing Exporters: 1963 This directory is an alphabetical listing of all Pennsylvania manufacturing establishments exporting in 1961, their addresses, and a listing of products exported by each -- also lists all exporting establishments under each manufactured product exported.

### 6. PUBLIC UTILITY STATISTICS

(Based on the annual Census of Public Utilities in Pennsylvania)

- U-1 Statistics for Electric Utilities in Pennsylvania, 1962 (also 1956 to 1960)
- U-2 Statistics for Gas Utilities in Pennsylvania, 1962 (also 1956 to 1961)
- U-3 Statistics for Telephone Utilities in Pennsylvania, 1962 (also 1956 to 1961)
- U-4 Statistics for Water Utilities Including Water Authorities in Pennsylvania, 1962 (also 1956 to 1961)
- U-5 Statistics for Sewer Authorities in Pennsylvania, 1962 (also 1956 to 1961)
- U-6 Statistics for Motor Bus and Electric Transportation Companies in Pennsylvania, 1962 (also 1956 and 1958 to 1960)

### 7. MUNICIPAL AUTHORITY STATISTICS

- A-1 1957 Statistics for Municipal Authorities
- A-1 1958 Statistics for Municipal Authorities
- A-59 1959 Statistics for Municipal Authorities
- A-62 1962 Statistics for Municipal Authorities

### 8. INCOME STATISTICS

- I-1 Pennsylvania's Personal Income by Type and County for Selected Years, 1929-1960

### 9. SPECIAL RELEASES

- S-2 Industrial Statistics for Pennsylvania, 1951 to 1955
- S-5 Mineral Statistics for Pennsylvania, 1957
- S-7 Mineral Statistics for Pennsylvania, 1958-1959
- S-8 Re-apportionment in Pennsylvania
- S-10 Employment Statistics in Pennsylvania for Selected Years: 1919 to 1961
- S-11a Economic Base Studies for Urban Planning and Development in Pennsylvania (A description and evaluation of such studies in Pennsylvania--by Morris Hamburg, University of Pennsylvania)
- S-11b An Evaluation of Selected Data Requirements and Availability for Urban Economic Planning and Development in Pennsylvania -- by Morris Hamburg and John H. Norton, University of Pennsylvania
- S-11c Selected Methods of Analysis for Urban Economic Planning and Development in Pennsylvania: Commentary on Regional Economic Accounting Systems, Benefit-Cost Analysis and Statistical Decision Theory -- by Morris Hamburg and Thomas W. Langford, Jr. Wharton School of Finance and Commerce, University of Pennsylvania
- S-12(LFC) County Labor Force Report - These reports contain information on employable age population, labor force, unemployment, occupations, and industrial attachment for the cities, boroughs, and townships in fifty-one (51) counties. The data in these reports are not available from any other source. Not included are 16 counties for which similar information is available in the Census Tract publications of the U. S. Bureau of the Census.

- S-13 Pennsylvania Scientific and Technical Personnel, 1962
- S-14 Comparable Statistics for Manufacturing Industries in Pennsylvania: 1916-1962

## C. OUT OF PRINT PUBLICATIONS

These out-of-print publications are listed because copies of many of these reports are available for reference in public, university, and college libraries.

- Pennsylvania Productive Industries - These publications include information on manufacturing, public utilities, and mineral industries for the years 1916 to 1950.
- Directory of Pennsylvania Manufacturing Exporters: 1960 Supplement No. 1 to the 1962 Industrial Directory of the Commonwealth of Pennsylvania
- Index of Statistical Sources for Pennsylvania (Editions in 1955, 1957, 1959, 1960, and 1961)
- P-1 County and City Population Estimates for Pennsylvania
- P-2 County Population Estimates for Penna. by Age and Sex
- P-3 County Population Estimates -- Notes on Methodology
- P-4 Local Population Estimates in Pennsylvania
- S-1 Leading Manufacturing Counties in Pennsylvania
- S-3 Industrial Statistics for Pennsylvania, 1916 to 1956
- S-4 Capital Investment for Manufacturing and Mining Industries in Pennsylvania, 1956
- S-6 Manufacturing Employment in Urban, Suburban, and Rural Places in Pennsylvania, 1960
- 56-5 Shifts in the Geographic Location of Pennsylvania Industry, 1920-1955
- 57-3 Industry Change in Pennsylvania, 1954-1955



## FOREWORD

The Department of Internal Affairs is pleased to present this report on comparable statistics for manufacturing industries in Pennsylvania for the period 1916 to 1962.

Previously, these data have been available for individual years from 1916 to 1950 in the Productive Industry Reports of the Bureau of Statistics; for the years 1951 to 1955, in a special release which is now out of print; and since 1956, in annual manufacturing census reports -- some of which are also out of print. However, because of changes in coverage and in the industrial classification system in use at different times, the data were not comparable for much of the period covered.

In 1963 the Department of Internal Affairs published as a special report, "Employment Statistics in Pennsylvania for Selected Years: 1919 to 1961". That report presented comparable historical data on employment, by county, for manufacturing, mining, and railroad repair shops for the years 1919, 1930, 1940, 1951, and 1956 to 1962.

We believe that these two reports provide a much-needed information source for historical analysis.

A handwritten signature in dark ink, appearing to read "Genevieve Blatt", with a stylized flourish at the end.

Genevieve Blatt  
Secretary of Internal Affairs



COMPARABLE STATISTICS FOR MANUFACTURING INDUSTRIES IN PENNSYLVANIA: 1916 TO 1962

CONTENTS

	<u>Page</u>
Introduction, Definitions, and Summary .....	6
Standard Industrial Classification Codes and Titles .....	8
Statistics for Manufacturing Establishments in Pennsylvania by Intermediate (Three Digit) Industry Groups	
1916 .....	10
1917 .....	11
1918 .....	12
1919 .....	13
1920 .....	14
1921 .....	15
1922 .....	16
1923 .....	17
1924 .....	18
1925 .....	19
1926 .....	20
1927 .....	21
1928 .....	22
1929 .....	23
1930 .....	24
1931 .....	25
1932 .....	26
1933 .....	27
1934 .....	28
1935 .....	29
1936 .....	30
1937 .....	31
1938 .....	32
1939 .....	33
1940 .....	34
1941 .....	35
1942 .....	36
1943 .....	37
1944 .....	38
1945 .....	39
1946 .....	40
1947 .....	41
1948 .....	42
1949 .....	43
1950 .....	44
1951 .....	45
1952 .....	46
1953 .....	47
1954 .....	48
1955 .....	49
1956 .....	50
1957 .....	51
1958 .....	52
1959 .....	53
1960 .....	54
1961 .....	55
1962 .....	56



## A. INTRODUCTION

Data presented in this report are: number of establishments, capital invested or capital expenditures, number of employees, wages and salaries, value of production, and value added by manufacture; classified by intermediate (three digit) industry groups. The definition of manufacturing and the classification system used in this report are those published in the 1957 edition of the Standard Industrial Classification Manual, as amended by the U. S. Bureau of the Budget.

Prior to 1956, the Bureau of Statistics classified establishments according to its own three digit system of industrial classification. In this report the data for all years have been converted to the 1957 SIC as amended.

Financial data for less than three establishments have been withheld to avoid disclosure of data for individual establishments.

## B. DEFINITIONS

Value added by manufacture was not collected for the years prior to 1940. Value added by manufacture, as reported from 1940 to date, is obtained by subtracting the costs of materials, fuel, electric energy, and contract work done by others from the value of production and related activities.

Capital invested, defined as the amount of money invested in plant and equipment (less depreciation) plus the value of land used in connection with the plant, was collected for the years 1916 to 1955. In 1956, capital invested was replaced by capital expenditures, which is defined as the expenditures for plant, machinery, equipment, major alterations, and capitalized improvements which are chargeable to the fixed assets accounts.

From 1916 to 1955, there were a number of non-manufacturing establishments included in the Bureau of Statistics' annual censuses. These were dropped when the Bureau transferred from its own industrial classification system to the SIC System of the U. S. Bureau of the Budget. The establishments dropped were of the following types: plumbing and heating; engineering service; laboratory service; laundry work, cleaning, and dyeing; and paving and road construction. Data for these establishments have been deleted for the years 1916 to 1955.

## C. SUMMARY

The number of employees in Pennsylvania's manufacturing industries has increased from 1,111,472 in 1916 to 1,378,576 in 1962. Employment was at its lowest level in 1932 when 777,992 persons were employed in manufacturing establishments throughout the State. The peak year for employment was in 1953 when 1,628,120 persons were employed.

Selected major industry groups which showed sizable increases in employment from 1916 to 1962 were the following:

Major group	1916		1962	
	Employment	Percent of total	Employment	Percent of total
Total	1,111,472	100.0	1,378,576	100.0
Apparel and related products	67,959	6.1	175,313	12.7
Printing, publishing, and allied products	31,675	2.8	64,785	4.7
Rubber and miscellaneous plastics products	4,594	0.0	23,377	1.7
Machinery, except electrical	45,480	4.1	112,515	8.2
Electrical machinery, equipment, and supplies	36,822	3.3	120,155	8.7
Instruments and related products	8,456	1.0	25,367	1.8

Selected major industry groups with sizable decreases in employment from 1916 to 1962 were the following:

Major group	1916		1962	
	Employment	Percent of total	Employment	Percent of total
Total	1, 111, 472	100. 0	1, 378, 576	100. 0
Ordnance and accessories	49, 213	4. 4	8, 972	1. 0
Tobacco manufactures	32, 504	2. 9	10, 184	1. 0
Textile mill products	141, 838	12. 8	73, 978	5. 4
Primary metals	242, 308	21. 8	209, 796	15. 2
Lumber and wood products	24, 451	2. 2	12, 763	1. 0

Major groups with the highest employment since 1916 were the following:

Major group	Peak year	Number of employees
Transportation equipment	1920	149, 990
Textile mill products	1929	191, 791
Primary metals	1943	294, 131
Apparel and related products	1953	194, 447

A summary of industrial statistics for selected years is listed below:

Year	Number of establishments	Number of employees	Wages and salaries (thousands of dollars)	Value of production
1962	17, 820	1, 378, 576	\$7, 205, 654	\$27, 142, 309
1956	16, 550	1, 480, 684	6, 358, 952	25, 796, 729
1953	18, 227	1, 628, 120	6, 048, 396	23, 222, 029
1946	16, 828	1, 489, 197	3, 268, 321	11, 752, 780
1934	16, 050	932, 046	987, 193	3, 663, 884
1929	16, 502	1, 107, 791	1, 685, 440	7, 301, 344
1916	14, 280	1, 111, 472	847, 894	5, 467, 284

## STANDARD INDUSTRIAL CLASSIFICATION CODES AND TITLES

19	Ordnance and accessories	283	Drugs
191	Guns, howitzers, mortars, and related equipment	284	Soap, detergents and cleaning preparations, perfumes, cosmetics, and other toilet preparations
192	Ammunition	285	Paints, varnishes, lacquers, enamels, and allied products
193	Tanks and tank components	286	Gum and wood chemicals
194	Sighting and fire control equipment	287	Agricultural chemicals
195	Small arms	289	Miscellaneous chemical products
196	Small arms ammunition		
199	Ordnance and accessories, n. e. c.	29	Petroleum products
20	Food and kindred products	291	Petroleum refining
201	Meat products	295	Paving and roofing materials
202	Dairy products	299	Miscellaneous products of petroleum and coal
203	Canning and preserving fruits, vegetables, and sea foods		
204	Grain mill products	30	Rubber and miscellaneous plastics products
205	Bakery products	301	Tires and inner tubes
206	Sugar	302	Rubber footwear
207	Confectionery and related products	303	Reclaimed rubber
208	Beverage industries	306	Fabricated rubber products
209	Miscellaneous food preparations and kindred products	307	Miscellaneous plastics products
21	Tobacco manufactures		
211	Cigarettes	31	Leather and leather products
212	Cigars	311	Leather tanning and finishing
213	Tobacco (chewing and smoking) and snuff	312	Industrial leather belting and packing
214	Tobacco stemming and redrying	313	Boot and shoe cut stock and findings
22	Textile mill products	314	Footwear
221	Broad woven fabric mills, cotton	315	Leather gloves and mittens
222	Broad woven fabric mills, man-made fiber and silk	316	Luggage
223	Broad woven fabric mills, wool: including dyeing and finishing	317	Handbags and other personal leather goods
224	Narrow fabrics and other smallwares mills: cotton, wool, silk, and man-made fiber	319	Leather goods, n. e. c.
225	Knitting mills		
226	Dyeing and finishing textiles, fabrics and knit goods	32	Stone, clay, and glass products
227	Floor covering mills	321	Flat glass
228	Yarn and thread mills	322	Glass and glassware, pressed or blown
229	Miscellaneous textile mills	323	Glass products, made of purchased glass
23	Apparel and related products	324	Cement, hydraulic
231	Men's, youths', and boys' suits, coats, and overcoats	325	Structural clay products
232	Men's, youths', and boys' furnishings, work clothing, and allied garments	326	Pottery and related products
233	Women's, misses', and juniors' outerwear	327	Concrete, gypsum, and plaster products
234	Women's, misses', children's, and infants' under garments	328	Cut stone and stone products
235	Hats, caps, and millinery	329	Abrasive, asbestos, and miscellaneous non-metallic mineral products
236	Girls', children's, and infants' outerwear		
237	Fur goods	33	Primary metals
238	Miscellaneous apparel and accessories	331	Blast furnaces, steel works, and rolling and finishing mills
239	Miscellaneous fabricated textile products	332	Iron and steel foundries
24	Lumber and wood products	333	Primary smelting and refining of nonferrous metals
242	Sawmills and planing mills	334	Secondary smelting and refining of nonferrous metals and alloys
243	Millwork, veneer, plywood, and prefabricated structural wood products	335	Rolling, drawing and extruding of nonferrous metals
244	Wooden containers	336	Nonferrous foundries
249	Miscellaneous wood products	339	Miscellaneous primary metal industries
25	Furniture and fixtures		
251	Household furniture	34	Fabricated metal products
252	Office furniture	341	Metal cans
253	Public building and related furniture	342	Cutlery, hand tools, and general hardware
254	Partitions, shelving, lockers, and office and store fixtures	343	Heating apparatus (except electric) and plumbing fixtures
259	Miscellaneous furniture and fixtures	344	Fabricated structural metal products
26	Paper and allied products	345	Screw machine products, and bolts, nuts, screws, rivets and washers
261	Pulp mills	346	Metal stampings
262	Paper mills	347	Coating, engraving, and allied services
263	Paperboard mills	348	Miscellaneous fabricated wire products
264	Converted paper and paperboard products	349	Miscellaneous fabricated metal products
265	Paperboard containers and boxes		
27	Printing, publishing, and allied industries	35	Machinery, except electrical
271	Newspapers: publishing, publishing and printing	351	Engines and turbines
272	Periodicals: publishing, publishing and printing	352	Farm machinery and equipment
273	Books	353	Construction, mining, and materials handling machinery and equipment
274	Miscellaneous publishing	354	Metalworking machinery and equipment
275	Commercial printing	355	Special industry machinery
277	Greeting card manufacturing	356	General industrial machinery and equipment
278	Bookbinding and related industries	357	Office, computing, and accounting machines
279	Service industries for the printing trade	358	Service industry machines
28	Chemicals and allied products	359	Miscellaneous machinery, except electrical
281	Industrial inorganic and organic chemicals		
282	Plastics materials and synthetic resins, synthetic rubber, synthetic and other man-made fibers	36	Electrical machinery, equipment, and supplies
		361	Electric transmission and distribution equipment
		362	Electrical industrial apparatus
		363	Household appliances
		364	Electrical lighting and wiring equipment
		365	Radio and television receiving sets
		366	Communication equipment
		367	Electronic components and accessories
		369	Miscellaneous electrical machinery, equipment, and supplies



37 Transportation equipment  
 371 Motor vehicles and motor vehicle equipment  
 372 Aircraft and parts  
 373 Ship and boat building and repairing  
 374 Railroad equipment  
 379 Miscellaneous transportation equipment  
  
 38 Professional, scientific, and controlling instruments;  
     photographic and optical goods; watches and clocks  
 381 Engineering, laboratory, and scientific and research  
     instruments and associated equipment  
 382 Instruments for measuring, controlling, and indicating  
     physical characteristics  
 383 Optical instruments and lenses  
 384 Surgical, medical, and dental instruments and  
     supplies  
 385 Ophthalmic goods  
 386 Photographic equipment and supplies  
 387 Watches, clocks, clockwork operated devices, and parts  
  
 39 Miscellaneous manufacturing industries  
 391 Jewelry, silverware, and plated ware  
 393 Musical instruments and parts  
 394 Toys, amusement, sporting and athletic goods  
 395 Pens, pencils, and other office and artists' materials  
 396 Costume jewelry, costume novelties, buttons, and  
     miscellaneous notions, except precious metals  
 398-99 Miscellaneous manufacturing industries

## 1916 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	14,280	\$2,495,921	1,111,472	\$847,894	\$5,467,284						
19	16	102,021	49,213	47,814	169,800	33	819	\$632,278	242,308	\$228,462	\$2,306,156
195	16	102,021	49,213	47,814	169,800	331	347	532,525	185,984	174,392	1,923,423
						332	213	37,568	34,089	34,443	186,085
20	3,334	232,041	62,349	46,906	412,739	333	16	7,163	1,404	1,340	10,475
201	75	19,360	4,526	3,742	65,521	334	13	15,909	2,929	3,007	37,116
202	351	11,033	5,317	3,819	30,647	336	102	10,405	4,888	3,293	34,663
203	53	8,934	3,990	1,776	18,776	339	128	28,708	13,014	11,987	114,394
204	384	12,722	2,485	1,818	32,508						
205	1,472	29,835	15,172	11,120	53,485	34	770	191,350	98,063	79,128	412,609
206	4	14,795	3,017	2,605	63,108	342	189	33,478	17,695	12,767	37,470
207	172	11,110	10,429	5,714	33,570	343	78	12,546	6,554	5,240	15,098
208	564	99,876	11,419	12,191	79,057	344	168	47,322	20,846	16,757	142,395
209	259	24,376	5,994	4,121	36,067	345	27	14,182	11,059	8,115	32,915
						346	73	11,620	7,564	5,116	16,411
21	893	29,305	32,504	13,825	49,741	348	83	48,011	22,650	21,852	115,087
211	2	-	82	-	-	349	152	24,191	11,695	9,281	53,233
212	845	27,958	31,835	13,584	47,407						
213	22	810	204	109	838	35	659	106,285	45,480	37,936	129,186
214	24	537	383	132	1,496	351	30	8,697	3,261	2,831	14,049
						352	29	7,552	2,570	1,774	4,212
22	1,096	175,294	141,838	71,855	436,452	353	60	10,384	4,238	3,851	11,753
221	64	8,489	6,097	3,662	19,090	354	45	6,357	4,147	3,589	9,833
222	251	39,692	44,431	20,018	168,683	355	260	60,945	25,014	20,918	73,524
223	76	18,638	10,499	6,673	35,852	356	25	7,143	2,739	2,270	6,747
224	46	4,188	3,791	1,899	8,734	357	5	1,574	927	537	1,759
225	315	28,889	35,177	16,800	76,460	358	3	347	145	104	288
226	112	19,550	8,335	5,921	30,231	359	202	3,286	2,439	2,062	7,021
227	87	21,916	9,050	5,543	26,853						
228	97	27,086	15,306	7,534	51,714	36	129	32,957	36,822	31,511	85,618
229	48	6,846	9,152	3,805	18,835	362	16	2,295	24,833	23,935	45,729
						364	62	5,863	4,668	2,721	7,917
23	1,261	65,965	67,959	35,789	166,580	369	51	24,799	7,321	4,855	31,972
231	191	10,846	9,331	5,880	27,902						
232	397	17,560	27,424	11,239	61,461	37	366	175,726	73,279	64,240	256,651
233	197	7,858	10,433	6,333	25,694	371	72	20,618	12,340	9,695	58,536
234	7	456	738	324	1,294	373	11	17,666	5,560	4,507	10,639
235	103	14,779	9,530	6,222	19,892	374	44	133,528	52,418	48,159	182,538
237	39	825	387	301	1,254	375	1	-	166	-	-
238	65	4,529	4,392	2,115	8,778	379	238	3,914	2,795	1,879	4,938
239	262	9,112	5,724	3,375	20,305						
						38	205	16,647	8,456	5,747	20,801
24	832	56,686	24,451	16,206	65,530	381	45	2,493	1,993	1,422	3,595
242	504	41,382	12,876	9,464	37,048	382	12	3,766	1,347	948	3,184
253	50	4,409	2,225	1,632	7,928	383	46	2,177	1,267	832	4,828
244	120	4,505	4,929	2,538	9,610	384	34	3,925	2,343	1,311	4,468
249	158	6,390	4,421	2,572	10,944	386	9	144	103	72	188
						387	59	4,142	1,403	1,162	4,538
25	283	14,418	13,918	8,563	29,896						
251	272	14,133	13,757	8,449	29,233	39	436	19,058	12,912	8,208	33,333
259	11	285	161	114	663	391	11	261	193	136	306
						393	31	1,945	932	744	2,083
26	369	124,278	23,111	15,647	97,691	394	27	1,719	1,712	921	3,304
261	5	8,462	2,106	1,639	2,428	395	31	1,064	622	453	1,457
264	224	25,778	13,321	9,779	69,333	396	35	1,919	2,227	1,075	3,502
265	122	4,692	5,714	2,674	8,882	398-99	301	12,150	7,226	4,879	22,681
266	18	85,346	1,970	1,555	17,048						
27	1,006	77,079	31,675	25,621	74,183						
271	997	76,752	31,353	25,293	73,785						
279	9	327	322	328	398						
28	536	117,471	30,153	25,864	222,540						
281	17	14,083	3,931	3,636	33,371						
283	74	11,294	1,961	1,420	11,128						
284	107	8,601	2,826	1,935	14,961						
285	106	11,798	2,853	3,104	23,749						
286	46	6,602	1,774	1,372	6,870						
287	27	6,575	1,294	964	5,000						
289	159	58,518	15,514	13,433	127,461						
29	191	102,802	14,343	12,336	135,779						
295	10	660	576	431	1,484						
299	181	102,142	13,767	11,905	134,295						
30	59	12,100	4,594	3,152	19,251						
302	1	-	416	-	-						
306	58	12,100	4,178	3,152	19,251						
31	348	88,867	32,573	20,918	207,140						
311	178	72,945	15,878	11,464	161,965						
312	19	1,775	728	605	5,493						
314	117	13,244	14,885	8,109	36,515						
315	2	-	51	-	-						
316	32	903	1,031	740	3,167						
32	672	123,293	65,471	48,166	135,608						
321	35	20,862	10,962	9,096	25,186						
322	148	14,678	16,916	10,244	24,310						
323	10	204	183	106	461						
324	25	43,766	9,070	9,316	33,452						
325	247	16,264	8,871	5,523	15,440						
326	104	14,553	13,225	9,596	20,238						
327	58	6,218	3,374	2,047	4,313						
329	45	6,748	2,870	2,238	12,208						

Detail may not add to total because of rounding.

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	14,901	\$3,064,538	1,187,674	\$1,087,678	\$7,057,229						
19	20	119,395	51,909	55,042	180,942	33	832	\$814,877	273,441	\$329,810	\$3,199,528
195	20	119,395	51,909	55,042	180,942	331	344	674,948	217,062	269,822	2,738,462
						332	225	54,801	32,739	34,872	167,268
20	3,213	250,083	63,127	53,369	477,700	333	19	8,289	1,445	1,606	24,740
201	77	14,033	4,374	4,160	66,328	334	16	30,963	3,063	3,795	69,478
202	354	15,421	6,494	5,351	46,705	336	107	11,759	3,895	3,757	35,753
203	58	11,142	4,845	2,412	21,766	339	121	34,117	15,237	15,958	163,827
204	376	13,790	2,497	2,233	48,062						
205	1,356	28,507	15,262	12,879	74,706	34	860	224,888	106,723	93,817	592,241
206	4	14,174	1,685	1,571	43,424	342	204	36,556	19,207	16,445	50,809
207	171	15,245	10,839	7,055	49,262	343	82	16,392	14,130	6,341	19,020
208	553	112,443	11,519	13,223	86,412	344	200	71,873	27,458	27,226	254,125
209	264	25,328	5,612	4,485	41,035	345	33	23,746	12,739	11,918	44,099
						346	78	12,836	7,199	6,031	26,948
21	791	23,373	32,562	18,007	65,242	347	51	1,573	1,059	925	2,186
211	1	-	74	-	-	348	78	27,183	11,995	13,120	133,435
212	755	20,286	31,932	17,667	60,625	349	134	34,729	12,936	11,811	61,619
213	17	1,491	359	246	2,117						
214	18	1,596	197	94	2,500	35	714	135,035	52,748	50,013	175,293
						351	28	6,984	3,631	3,400	14,325
22	1,166	223,950	149,025	89,156	503,994	352	28	3,360	1,746	1,438	4,748
221	71	13,191	6,535	4,632	24,685	353	60	14,601	4,798	4,828	16,590
222	301	56,853	50,318	26,064	156,590	354	49	12,932	4,312	4,284	16,152
223	80	24,336	10,812	7,824	54,178	355	298	80,993	30,858	29,301	97,707
224	38	4,950	3,602	1,992	12,181	356	31	8,332	3,326	3,095	11,671
225	330	33,233	36,507	19,797	83,629	357	7	2,879	1,160	951	3,352
226	115	10,776	8,675	7,127	34,476	358	2	-	36	-	-
227	81	18,694	6,667	4,999	27,252	359	211	4,954	2,881	2,716	10,748
228	104	29,653	14,557	8,612	72,728						
229	46	32,264	11,352	8,109	38,275	36	145	121,895	44,505	43,098	138,694
						362	10	80,735	30,812	32,100	87,176
23	1,493	84,058	69,872	41,633	199,590	364	64	9,097	4,673	3,521	8,674
231	187	14,362	10,763	7,589	34,338	369	71	32,063	9,020	7,477	42,844
232	602	21,083	28,820	13,553	69,379						
233	198	8,072	8,864	5,806	25,421	37	377	223,213	76,658	89,061	342,209
234	7	408	620	251	994	371	89	31,832	15,367	14,745	74,971
235	96	24,702	9,410	7,296	23,532	373	11	17,243	8,639	9,514	28,219
237	35	836	369	329	1,349	374	53	170,255	49,942	62,853	233,658
238	59	3,447	3,325	1,555	9,226	375	2	-	218	-	-
239	309	11,148	7,701	5,254	35,351	379	222	3,883	2,492	1,949	5,361
24	813	58,271	23,603	18,229	76,432	38	206	20,261	9,652	7,677	25,231
242	491	37,702	12,137	10,326	41,205	381	42	3,023	2,347	1,951	5,362
243	51	6,194	2,027	1,691	7,554	382	10	4,091	1,379	1,343	4,884
244	116	5,570	5,179	3,337	14,544	383	46	2,109	1,384	1,048	2,895
249	155	8,805	4,260	2,875	13,129	384	39	4,276	2,635	1,597	5,746
						386	11	2,180	480	482	1,450
25	275	18,143	13,869	10,042	33,538	387	58	4,582	1,427	1,256	4,894
251	263	17,899	13,699	9,903	32,909						
259	12	244	170	139	629	39	403	28,630	13,910	10,157	50,294
						391	10	230	181	164	306
26	378	58,434	23,906	18,742	96,877	393	33	2,499	1,386	1,058	2,799
261	2	-	674	-	-	394	35	3,448	2,567	1,665	5,702
264	234	45,158	15,233	13,134	70,775	395	28	1,360	784	629	1,817
265	127	5,424	5,582	3,358	11,454	396	30	2,878	1,853	1,267	3,288
266	15	7,852	2,417	2,250	14,648	398-99	267	18,215	7,139	5,374	36,382
27	1,426	114,319	31,942	29,724	85,026						
271	1,417	114,007	31,626	29,364	84,211						
279	9	312	316	360	815						
28	515	135,114	30,062	28,109	198,140						
281	24	26,137	4,784	5,307	37,130						
283	73	9,769	1,814	1,331	10,466						
284	110	8,791	3,106	2,350	18,152						
285	90	14,138	2,750	2,833	19,921						
286	47	6,736	1,841	1,649	6,862						
287	23	4,104	1,335	1,276	6,890						
289	148	65,439	14,432	13,363	98,719						
29	195	104,066	17,211	16,904	202,378						
291	73	12,911	2,179	2,195	8,804						
295	13	1,694	842	666	1,966						
299	109	89,461	14,190	14,043	191,608						
30	68	16,313	6,052	4,328	26,981						
302	1	-	1,328	-	-						
306	67	16,313	4,724	4,328	26,981						
31	325	96,395	29,943	22,911	194,433						
311	158	77,458	14,101	12,926	141,676						
312	20	1,887	802	632	6,644						
314	113	16,132	13,930	8,437	42,680						
315	2	-	53	-	-						
316	32	918	1,057	916	3,433						
32	686	193,825	66,954	57,849	192,466						
321	39	36,183	11,824	11,402	30,815						
322	141	14,309	14,169	10,809	27,975						
323	9	280	157	90	575						
324	26	46,126	9,710	9,752	37,539						
325	227	16,092	8,238	6,285	20,192						
326	123	61,858	16,297	13,985	46,716						
327	57	9,754	2,503	1,819	5,976						
329	64	9,223	4,056	3,707	22,678						

Detail may not add to total because of rounding.



## 1918 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	14, 122	\$3, 257, 763	1, 208, 491	\$1, 399, 277	\$7, 853, 765						
19	25	102, 938	68, 974	98, 898	204, 617	329	59	\$11, 244	3, 803	\$4, 328	\$21, 160
195	25	102, 938	68, 974	98, 898	204, 617						
20	3, 096	278, 178	63, 229	65, 248	620, 352	331	824	818, 506	266, 732	376, 973	3, 227, 273
201	78	14, 614	4, 779	5, 722	97, 157	332	323	676, 480	210, 821	301, 265	2, 771, 320
202	366	19, 107	7, 107	7, 393	57, 871	333	229	62, 810	32, 266	44, 420	175, 184
203	60	12, 866	4, 744	3, 147	24, 123	334	20	14, 513	1, 937	2, 823	28, 860
204	356	13, 628	2, 297	2, 495	48, 170	336	16	24, 384	2, 438	3, 866	60, 360
205	1, 186	38, 491	15, 300	15, 328	125, 016	339	105	13, 497	5, 149	6, 016	39, 498
206	7	22, 810	2, 577	3, 501	74, 345		131	26, 822	14, 121	18, 583	152, 039
207	170	29, 352	11, 163	8, 966	62, 901	34	801	246, 852	97, 258	118, 858	605, 718
208	538	97, 996	10, 122	13, 505	87, 249	342	180	38, 794	18, 177	20, 205	58, 404
209	335	29, 314	5, 140	5, 191	43, 520	343	79	16, 220	6, 037	6, 846	19, 187
						344	190	93, 921	30, 222	40, 727	233, 867
21	734	23, 073	29, 388	18, 029	66, 874	345	31	20, 034	12, 565	14, 175	50, 822
211	4	894	71	102	1, 040	346	63	6, 450	4, 197	3, 766	17, 487
212	652	18, 431	28, 399	17, 352	59, 596	347	56	1, 513	928	937	2, 318
213	25	1, 545	435	377	3, 272	348	68	22, 104	11, 457	15, 956	137, 107
214	53	2, 203	483	198	2, 966	349	134	47, 816	13, 675	16, 246	86, 538
22	1, 139	242, 459	142, 818	108, 156	612, 702	35	698	149, 294	56, 836	69, 242	249, 657
221	72	14, 872	7, 175	6, 902	40, 573	351	28	14, 813	5, 763	6, 645	21, 964
222	295	64, 781	50, 401	31, 663	164, 938	352	25	3, 011	1, 218	1, 230	4, 627
223	81	19, 218	8, 323	8, 067	66, 909	353	68	13, 998	4, 637	5, 982	24, 454
224	43	9, 516	4, 622	3, 222	18, 258	354	47	19, 015	5, 667	7, 184	24, 120
225	326	38, 078	35, 739	24, 677	119, 751	355	304	82, 700	32, 959	40, 596	144, 657
226	112	19, 696	8, 431	8, 708	39, 592	356	26	9, 066	2, 892	3, 456	12, 207
227	69	19, 589	5, 904	5, 060	28, 260	357	6	1, 689	1, 078	1, 067	3, 737
228	96	31, 463	13, 940	12, 049	95, 784	358	6	60	33	42	207
229	45	25, 246	8, 283	7, 808	38, 637	359	188	4, 942	2, 589	3, 040	13, 707
23	1, 261	93, 590	65, 414	49, 322	252, 020	36	141	141, 913	54, 925	70, 705	162, 937
231	182	16, 749	11, 375	10, 274	48, 627	362	9	97, 038	40, 997	57, 131	108, 848
232	391	25, 367	25, 498	14, 514	89, 602	364	61	9, 642	4, 539	3, 786	8, 807
233	178	8, 263	7, 634	6, 297	29, 386	369	71	35, 233	9, 389	9, 788	45, 287
234	6	360	587	278	1, 164						
235	93	25, 914	8, 165	7, 812	24, 523	37	346	273, 517	107, 519	158, 189	510, 437
237	38	947	425	433	1, 955	371	89	27, 054	11, 786	13, 758	70, 087
238	59	2, 410	3, 339	2, 218	11, 565	373	16	70, 134	33, 784	57, 857	108, 000
239	314	13, 580	8, 391	7, 496	45, 198	374	51	172, 266	59, 620	84, 451	326, 399
						375	1	-	140	-	-
24	750	66, 752	22, 391	21, 105	91, 567	379	189	4, 063	2, 189	2, 123	5, 944
242	450	45, 530	11, 307	11, 313	48, 064						
243	44	6, 064	2, 401	2, 412	11, 126	38	211	25, 989	11, 449	10, 526	31, 700
244	115	5, 748	4, 316	3, 650	17, 020	381	43	4, 254	2, 746	2, 918	7, 764
249	141	9, 410	4, 367	3, 730	15, 357	382	10	4, 273	1, 189	1, 353	4, 300
						383	48	4, 016	2, 472	2, 544	5, 797
25	266	18, 814	12, 148	10, 860	36, 639	384	40	4, 228	2, 809	1, 437	7, 547
251	255	18, 545	11, 996	10, 705	36, 199	386	17	5, 259	1, 087	1, 147	2, 475
259	11	269	152	155	440	387	53	3, 959	1, 146	1, 127	3, 827
26	359	61, 576	22, 892	22, 647	99, 108	39	419	32, 150	12, 130	10, 821	49, 800
261	1	-	158	-	-	391	7	197	112	136	244
264	220	46, 697	15, 679	17, 051	72, 751	393	37	3, 030	940	944	3, 520
265	123	5, 574	4, 929	3, 097	11, 537	394	34	3, 459	2, 220	1, 697	6, 078
266	15	9, 305	2, 126	2, 499	14, 820	395	31	1, 796	827	762	2, 005
						396	26	1, 335	1, 044	975	2, 177
27	1, 345	87, 308	31, 265	33, 451	98, 802	398-99	284	22, 333	6, 987	6, 307	35, 780
271	1, 335	86, 993	30, 957	33, 052	97, 963						
279	10	315	308	399	839						
28	485	184, 082	33, 414	40, 167	269, 593						
281	24	25, 548	6, 437	8, 704	62, 827						
283	68	8, 893	1, 610	1, 534	12, 396						
284	99	9, 333	1, 865	2, 028	19, 797						
285	89	12, 683	2, 760	3, 480	25, 583						
286	39	5, 639	1, 644	1, 901	4, 864						
287	22	4, 330	1, 860	2, 072	10, 362						
289	144	117, 656	17, 238	20, 448	133, 764						
29	224	142, 250	17, 993	22, 844	259, 665						
291	108	21, 625	3, 366	4, 414	31, 424						
295	26	874	559	436	1, 443						
299	90	119, 751	14, 068	17, 994	226, 798						
30	72	16, 522	5, 796	4, 605	30, 122						
302	1	-	1, 463	-	-						
306	71	16, 522	4, 333	4, 605	30, 122						
31	308	102, 741	28, 907	26, 986	198, 031						
311	143	79, 731	13, 664	15, 461	140, 595						
312	20	6, 067	1, 496	1, 589	8, 880						
314	109	15, 812	12, 488	8, 986	43, 032						
315	2	-	68	-	-						
316	34	1, 131	1, 191	950	5, 524						
32	618	149, 259	57, 013	51, 645	176, 160						
321	32	32, 948	8, 394	9, 790	26, 902						
322	121	14, 606	10, 851	9, 612	25, 204						
323	9	304	168	153	669						
324	27	48, 636	8, 439	10, 763	38, 532						
325	188	13, 688	5, 140	5, 244	13, 040						
326	122	21, 973	17, 429	18, 903	43, 901						
327	60	5, 860	2, 789	2, 852	6, 752						

Detail may not add to total because of rounding

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	14,021	\$3,585,578	1,169,267	\$1,488,436	\$7,215,497						
19	13	90,498	18,220	27,572	50,263	329	54	\$11,146	2,651	\$3,193	\$16,650
195	13	90,498	18,220	27,572	50,263	33	839	818,950	227,938	378,845	2,372,936
20	2,913	271,360	68,026	79,485	679,733	331	314	659,352	180,268	311,452	2,050,366
201	75	14,924	4,866	6,558	92,520	332	230	67,566	27,066	37,843	117,477
202	268	24,581	6,815	8,415	66,736	333	26	11,855	2,883	4,417	26,562
203	51	18,931	4,720	3,951	28,978	334	17	24,901	1,846	3,104	39,251
204	392	19,068	2,779	3,158	55,466	336	105	14,287	4,102	5,480	33,048
205	1,194	30,403	14,896	17,233	89,969	339	147	40,989	11,773	16,549	106,232
206	5	18,361	3,682	5,536	128,653	34	815	311,837	97,747	136,183	519,296
207	159	19,531	12,405	12,369	81,784	342	187	42,425	17,467	20,105	57,635
208	469	91,663	8,359	12,744	65,400	343	77	19,282	6,060	8,138	21,390
209	300	33,898	9,504	9,521	70,227	344	202	130,219	29,047	44,459	198,084
21	709	35,094	32,168	21,941	83,447	345	27	31,245	11,059	13,837	31,848
211	2	-	838	-	-	346	59	9,601	4,919	5,237	18,782
212	673	32,141	30,540	21,249	77,768	347	60	1,994	1,126	1,335	2,966
213	19	1,649	537	522	3,557	348	74	43,798	15,000	26,125	125,455
214	15	1,304	253	170	2,122	349	129	33,273	13,069	16,947	63,136
22	1,243	293,230	161,163	144,408	768,590	35	711	204,192	59,911	80,374	271,107
221	74	21,003	8,499	9,771	49,542	351	22	22,282	5,801	8,014	38,943
222	347	88,694	57,079	44,289	238,423	352	26	5,132	1,697	1,938	4,890
223	78	17,598	8,312	9,812	66,460	353	71	21,840	6,095	9,082	28,290
224	39	6,088	3,402	2,978	14,266	354	48	23,263	5,415	7,798	21,767
225	343	44,058	36,669	28,713	135,346	355	325	113,475	35,585	46,752	150,256
226	114	18,042	9,136	11,053	49,187	356	23	7,128	1,638	2,167	8,803
227	69	20,591	7,084	7,152	36,380	357	7	5,035	928	1,075	4,182
228	115	44,609	19,019	18,653	117,430	358	3	436	133	132	790
229	64	32,547	11,963	11,987	61,556	359	186	5,601	2,619	3,416	13,186
23	1,183	84,849	61,385	52,025	253,745	36	166	130,962	43,355	55,677	110,529
231	184	16,150	10,211	10,770	50,184	362	12	78,514	25,598	35,918	37,140
232	393	28,260	24,784	16,248	83,670	363	12	4,195	1,385	1,656	6,259
233	173	9,184	7,682	7,065	34,043	364	58	8,646	5,172	5,359	12,629
234	6	325	703	400	1,754	369	84	39,607	11,200	12,744	54,501
235	86	13,701	8,554	8,914	27,960	37	351	377,868	135,846	200,494	613,830
237	33	1,116	400	518	2,081	371	110	50,431	20,089	26,220	107,520
238	30	3,470	2,363	1,462	9,762	372	1	-	2,088	-	-
239	278	12,643	6,688	6,648	44,291	373	19	139,120	64,906	101,899	210,241
24	713	56,848	21,292	22,507	99,948	374	56	184,915	46,842	70,446	291,007
242	443	38,278	12,209	13,876	64,682	375	2	-	249	-	-
243	53	3,235	1,600	1,711	8,253	379	163	3,402	1,672	1,929	5,062
244	86	4,597	2,904	2,573	10,933	38	187	21,148	10,891	12,836	34,443
249	131	10,738	4,579	4,347	16,080	381	46	4,806	2,888	4,726	8,380
25	265	23,544	13,925	14,506	48,459	382	10	4,083	1,246	1,521	4,890
251	252	23,110	13,749	14,298	47,790	383	53	3,861	1,705	1,864	5,790
259	13	434	176	208	669	384	53	5,313	3,482	3,040	9,480
26	365	69,626	25,319	29,084	119,411	386	14	981	789	894	4,015
261	16	6,228	3,337	3,924	15,344	387	11	2,104	781	791	1,888
264	218	48,064	14,339	18,273	75,907	39	515	48,952	15,322	17,882	76,376
265	118	6,812	5,555	4,123	13,222	391	49	5,365	835	1,032	6,864
266	13	8,522	2,088	2,764	14,938	393	27	3,175	1,051	1,258	4,055
27	1,312	87,776	35,570	42,878	146,093	394	26	3,989	2,718	2,375	7,897
271	1,300	87,240	35,166	42,222	144,637	395	22	1,371	786	910	1,721
279	12	536	404	656	1,456	396	30	4,206	1,875	1,810	3,678
28	504	155,376	26,038	34,020	242,118	398-99	361	30,846	8,057	10,497	52,161
281	16	8,489	1,703	2,496	26,555						
283	65	5,872	1,506	1,665	13,990						
284	118	14,064	2,736	3,461	24,462						
285	94	18,864	4,586	6,084	35,216						
286	41	7,591	1,392	1,415	3,090						
287	26	4,961	1,317	1,644	8,151						
289	144	95,535	12,798	17,255	130,654						
29	224	169,634	19,445	28,289	217,997						
291	129	47,160	3,561	4,711	29,139						
295	7	681	382	385	783						
299	88	121,793	15,502	23,193	188,075						
30	69	20,412	7,370	7,209	33,516						
302	1	-	1,633	-	-						
306	68	20,412	5,737	7,209	33,516						
31	315	123,378	32,387	36,657	292,353						
311	156	97,603	16,299	21,465	223,776						
312	19	3,756	1,186	1,470	7,969						
314	112	20,091	13,834	12,533	56,861						
315	2	-	77	-	-						
316	26	1,928	991	1,189	3,747						
32	609	190,044	55,949	65,564	181,307						
321	36	28,131	8,616	11,986	38,261						
322	121	16,465	12,282	12,338	30,658						
323	8	365	156	178	793						
324	25	48,466	8,734	12,452	44,899						
325	193	14,937	6,134	6,352	14,604						
326	120	65,868	15,106	16,595	29,886						
327	52	4,666	2,270	2,470	5,556						

Detail may not add to total because of rounding.

## 1920 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	17,267	\$4,092,878	1,128,744	\$1,650,224	\$9,034,417						
19	4	28,588	-	-	36,926	326	22	\$2,447	17,360	\$23,199	\$4,094
195	4	28,588	-	-	36,926	327	47	4,288	2,608	3,452	5,184
						329	178	85,082	3,046	4,463	65,979
20	4,220	295,222	65,251	84,310	802,432						
201	127	19,006	4,667	6,956	125,660	33	929	1,040,828	127,428	226,892	3,377,114
202	306	26,576	6,525	8,925	54,221	331	348	868,147	100,781	186,535	2,973,218
203	50	21,270	4,527	4,190	27,857	332	253	70,391	15,131	22,664	170,989
204	431	20,178	2,666	3,350	53,034	333	33	32,401	1,611	2,643	89,849
205	2,228	39,684	14,304	18,283	144,122	334	-	304	1,031	1,858	3,454
206	4	26,758	3,531	5,871	192,235	336	116	12,354	2,292	3,281	36,931
207	219	25,513	11,898	13,119	87,100	339	179	57,231	6,582	9,911	102,673
208	533	77,563	8,017	13,517	48,308						
209	322	38,674	9,116	10,099	69,895	34	779	255,926	105,158	186,900	522,516
						342	190	45,668	18,791	27,592	76,068
21	1,427	37,495	42,140	38,843	144,021	343	79	17,455	6,519	11,167	29,054
211	8	5,293	1,098	1,218	16,852	344	168	63,553	31,254	61,023	84,146
212	1,344	28,768	40,008	36,439	121,374	345	26	39,072	11,896	18,989	51,137
213	25	1,713	703	895	3,334	346	61	8,515	5,292	7,186	18,275
214	50	1,721	331	291	2,461	347	62	5,216	1,210	1,832	7,758
						348	73	32,822	16,136	35,853	140,808
22	1,435	330,851	119,862	119,771	875,050	349	120	43,625	14,060	23,258	115,270
221	119	33,291	6,320	8,104	69,689						
222	409	97,115	56,603	52,201	288,901	35	796	215,431	108,305	193,355	272,819
223	178	60,845	6,181	8,138	165,245	351	11	4,645	10,486	19,277	7,605
224	42	6,106	2,529	2,470	17,339	352	24	5,308	3,067	4,662	6,917
225	390	48,314	27,271	23,816	150,368	353	41	7,679	11,018	21,847	10,355
226	125	20,716	6,794	9,168	57,930	354	59	19,952	9,789	18,759	18,721
227	81	26,682	5,268	5,932	53,418	355	378	153,004	64,335	112,477	195,209
229	91	37,782	8,896	9,942	72,160	356	29	8,305	2,961	5,213	10,292
						357	10	8,819	1,676	2,585	7,304
23	1,362	90,457	106,292	106,221	300,004	358	-	502	239	317	1,217
231	230	18,454	17,681	21,989	65,322	359	244	7,217	4,734	8,218	15,199
232	375	25,811	42,918	33,176	86,154						
233	197	9,059	13,301	14,425	35,968	36	194	222,919	24,578	43,288	189,094
234	5	272	1,217	816	2,032	362	9	158,100	14,512	27,927	93,522
235	106	17,202	14,812	18,200	38,741	363	11	9,795	785	1,287	14,930
237	97	1,943	692	1,057	3,800	364	62	8,765	2,932	4,166	15,464
238	49	2,879	4,091	2,985	18,978	365	9	2,718	-	-	3,705
239	303	14,837	11,580	13,573	49,009	369	103	43,541	6,349	9,908	61,473
24	780	64,945	22,297	29,181	115,017	37	422	482,609	149,990	267,357	732,179
242	477	41,548	12,786	17,991	65,346	371	162	108,571	22,527	34,841	201,225
243	66	4,859	1,675	2,218	15,398	373	26	134,762	72,784	135,409	198,818
244	99	6,381	3,041	3,336	17,466	374	67	235,282	52,526	93,614	325,223
249	138	12,157	4,795	5,636	16,807	375	5	1,210	279	930	1,551
						379	162	2,784	1,874	2,563	5,362
25	273	26,201	6,730	6,960	55,981						
251	260	25,637	6,022	5,908	55,045	38	210	23,346	19,389	32,231	39,657
259	13	564	708	1,052	936	381	49	4,289	5,143	11,869	8,384
						382	9	4,256	2,218	3,819	6,530
26	368	97,598	12,764	18,605	183,085	383	57	5,126	3,035	4,680	7,774
261	14	7,666	1,682	2,510	34,991	384	71	6,495	6,199	7,633	12,448
264	217	76,292	7,230	11,690	110,503	386	15	1,089	1,404	2,244	2,315
265	125	8,164	2,800	2,637	19,970	387	9	2,091	1,390	1,986	2,206
266	12	5,476	1,052	1,768	17,621						
						39	631	46,943	14,745	17,567	81,901
27	1,416	113,227	48,504	70,699	188,768	391	103	5,002	803	1,014	6,606
271	1,369	111,548	47,954	69,618	184,533	393	25	3,661	1,011	1,236	4,220
278	34	966	-	-	2,252	394	51	3,719	2,616	2,333	3,902
279	13	713	550	1,081	1,983	395	62	1,225	756	894	7,600
						396	32	3,818	1,804	1,779	4,572
28	562	260,649	28,193	44,068	326,844	398-99	358	29,518	7,755	10,311	55,001
281	10	9,973	1,844	3,233	26,875						
283	98	8,186	1,568	2,157	17,848						
284	123	14,748	2,962	4,483	19,016						
285	92	25,584	4,965	7,881	37,727						
286	39	7,266	1,507	1,833	7,766						
287	26	4,509	1,426	2,129	18,872						
289	174	190,383	13,921	22,352	198,740						
29	292	98,745	14,097	22,034	247,654						
291	186	61,563	2,582	3,669	45,762						
295	8	670	277	300	5,467						
299	98	36,512	11,238	18,065	196,425						
30	126	26,493	11,681	12,071	41,532						
301	11	16,010	-	-	23,874						
302	-	400	2,572	2,674	7,327						
306	115	10,083	9,109	9,397	10,331						
31	386	117,515	37,052	38,224	243,943						
311	85	80,242	18,649	22,383	147,873						
312	20	4,178	1,356	1,533	9,896						
314	125	23,952	15,826	13,068	67,431						
315	-	109	88	-	290						
316	38	3,414	1,133	1,240	5,492						
319	118	5,620	-	-	12,961						
32	655	216,890	64,288	91,647	257,880						
321	38	30,602	9,900	16,754	60,271						
322	120	17,265	14,112	17,246	41,577						
323	7	417	179	248	1,861						
324	31	59,833	10,035	17,406	60,098						
325	212	16,956	7,048	8,879	18,816						

Detail may not add to total because of rounding.



(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	16,655	\$4,229,143	946,505	\$1,138,101	\$4,906,389						
19	2	-	103	-	-	323	\$90	\$14,504	6,858	\$6,811	\$15,741
195	2	-	103	-	-	324	29	50,360	8,614	12,087	46,427
20	3,999	308,318	69,252	88,804	540,186	325	274	85,353	15,266	15,403	29,508
201	139	23,176	7,403	11,136	94,519	326	20	2,300	1,620	1,908	3,780
202	361	32,853	7,123	10,027	52,426	327	45	4,822	1,712	1,838	4,032
203	44	20,409	4,175	3,241	19,469	328	58	1,889	577	580	1,381
204	460	17,685	2,546	3,175	36,980	329	46	10,909	2,401	3,290	11,008
205	1,984	41,988	21,064	26,743	114,991	33	644	848,659	121,352	167,651	1,022,728
206	3	28,495	2,644	3,934	89,736	331	196	672,113	78,500	108,689	827,792
207	204	24,150	11,280	11,592	58,965	332	235	63,206	18,304	23,524	69,178
208	523	81,410	6,815	11,068	36,603	333	46	51,968	4,946	7,244	41,740
209	281	38,152	6,202	7,888	36,497	334	13	19,555	9,863	13,533	41,794
21	1,468	37,999	39,479	26,934	122,223	336	108	19,503	6,489	10,361	17,271
211	6	5,372	1,101	1,006	25,809	339	46	22,314	3,250	4,300	24,953
212	1,386	29,157	37,312	25,016	91,456	34	1,025	458,404	115,963	157,039	558,390
213	30	2,300	452	502	3,245	342	254	71,142	21,057	25,419	62,371
214	46	1,170	614	410	1,713	343	78	18,300	6,061	7,174	21,311
22	1,429	581,075	161,573	151,899	668,915	344	244	137,926	31,441	45,673	161,868
221	97	21,936	8,666	9,319	34,526	345	26	31,858	7,856	8,337	15,321
222	450	104,862	62,215	51,895	260,085	346	56	8,494	3,395	3,482	12,596
223	106	283,788	10,380	12,619	60,103	348	117	77,175	14,301	18,161	72,236
224	43	6,285	3,875	3,831	18,770	349	250	113,509	31,852	48,793	212,687
225	395	50,129	38,698	31,720	125,886	35	827	217,763	45,594	64,372	170,958
226	120	21,106	8,783	12,074	44,244	351	22	13,415	2,345	3,347	10,696
227	77	29,083	7,952	8,468	31,969	352	21	6,400	1,352	1,472	3,914
228	73	38,293	13,844	13,345	58,671	353	70	23,894	4,638	6,802	18,347
229	68	25,593	7,160	8,628	34,661	354	53	17,526	2,163	2,844	6,380
23	1,359	106,879	65,609	59,660	241,759	355	371	133,398	29,457	42,222	110,760
232	619	44,076	35,352	29,733	126,010	356	26	8,034	1,736	2,582	6,686
233	283	11,754	10,203	9,304	39,294	357	9	7,623	1,324	1,427	4,507
234	6	243	576	382	1,840	358	4	637	203	368	1,139
235	104	17,585	7,908	8,825	23,607	359	251	6,836	2,376	3,308	8,529
237	93	2,097	632	846	3,110	36	182	211,262	35,010	48,629	146,760
238	25	2,219	2,263	1,427	9,400	362	8	158,008	22,065	32,834	88,882
239	229	28,905	8,675	9,143	38,498	364	53	6,305	2,953	3,052	7,942
24	733	65,064	20,283	23,646	76,054	365	5	205	48	48	129
242	458	38,533	10,458	13,488	41,721	369	116	46,744	9,944	12,695	49,807
243	6	3,465	1,153	1,314	6,084	37	385	331,155	61,243	85,363	272,424
244	96	5,784	2,964	2,644	9,908	371	138	63,928	12,568	17,214	31,205
249	173	17,282	5,708	6,200	18,341	372	1	-	3	-	-
25	292	28,706	11,240	12,519	40,755	373	22	-	14,380	-	-
251	281	28,211	11,066	12,279	39,940	374	64	232,311	32,869	43,086	176,117
259	11	495	174	240	815	379	160	3,612	1,423	1,690	4,475
26	345	88,575	23,211	27,086	101,269	38	197	21,438	7,829	9,610	25,106
261	10	10,861	959	1,173	7,295	381	46	4,775	1,884	2,582	5,463
263	14	9,236	1,949	2,835	13,966	382	6	3,997	997	1,261	4,558
264	194	60,057	15,145	18,522	66,643	383	54	3,596	1,360	1,970	5,397
265	127	8,421	5,158	4,556	13,365	384	73	5,602	2,556	2,510	6,545
27	1,525	121,015	36,386	56,787	173,894	386	11	392	182	241	1,064
271	509	79,046	18,125	29,351	109,027	387	7	3,076	850	1,046	2,079
273	49	8,486	3,207	4,250	9,419	39	499	43,589	14,399	15,996	59,151
275	823	25,756	11,625	17,499	43,951	391	61	2,332	752	1,143	3,485
278	50	795	828	914	1,890	393	29	3,674	943	1,150	3,330
279	94	6,932	2,601	4,773	9,607	394	40	4,942	2,425	2,435	7,709
28	567	143,292	18,750	24,743	140,775	395	30	2,319	769	1,042	2,854
281	27	18,123	1,402	1,766	19,700	396	29	3,660	1,525	1,509	3,599
283	86	9,222	1,629	2,145	12,157	398-99	310	26,662	7,985	8,717	38,174
284	125	13,432	1,984	2,472	13,594						
285	94	22,985	3,475	5,438	27,841						
286	37	6,864	1,021	862	3,001						
287	28	11,566	1,280	1,586	9,793						
289	170	61,100	7,959	10,474	54,689						
29	152	271,558	13,254	20,790	191,275						
291	64	221,662	9,593	15,128	127,898						
295	8	462	475	488	1,570						
299	80	49,434	3,186	5,174	61,807						
30	142	26,478	7,187	8,312	38,340						
301	12	-	4,006	-	-						
302	1	-	1,613	-	-						
306	129	9,190	1,568	1,889	6,852						
31	368	100,130	27,596	30,704	155,059						
311	96	65,258	10,655	13,124	89,161						
312	18	4,354	823	1,071	3,898						
314	116	22,019	13,144	13,055	48,277						
315	3	75	89	72	199						
316	44	3,275	1,132	1,487	4,576						
319	91	5,149	1,753	1,895	8,948						
32	638	217,304	51,192	57,557	160,368						
321	35	35,345	9,587	10,575	32,976						
322	41	11,822	4,557	5,065	15,515						

Detail may not add to total because of rounding.

## 1922 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	16,649	\$3,999,563	1,030,633	\$1,204,926	\$5,761,115						
20	4,080	332,708	74,164	88,051	568,909	325	294	\$95,165	19,546	\$20,751	\$47,358
201	145	25,507	8,187	11,836	106,492	326	4	105	66	80	274
202	415	39,636	8,110	11,047	56,277	327	56	5,307	1,945	2,042	4,813
203	56	24,243	4,924	3,404	24,406	328	78	2,198	838	859	2,616
204	606	21,916	3,201	3,857	43,235	329	58	10,514	2,576	2,994	14,452
205	1,862	43,953	21,434	26,199	109,166						
206	3	22,426	2,985	4,502	114,409	33	663	836,253	139,198	184,628	1,441,225
207	206	43,299	13,557	11,251	47,170	331	218	660,913	91,384	119,783	1,176,341
208	488	72,656	6,083	8,928	30,526	332	231	61,443	21,617	27,966	90,893
209	299	39,072	5,683	7,027	37,228	333	42	51,678	5,862	8,528	52,447
						334	13	19,006	11,577	16,302	67,159
21	1,235	36,758	38,533	27,286	120,336	336	112	21,603	4,847	6,797	22,594
211	6	5,382	1,115	981	21,630	339	47	21,610	3,911	5,252	31,791
212	1,160	28,319	36,239	25,325	93,364						
213	27	1,306	365	423	3,084	34	1,056	471,525	138,833	176,364	714,627
214	42	1,751	814	557	2,258	342	246	73,545	25,433	30,815	84,377
						343	76	18,718	6,619	8,180	25,880
22	1,425	380,868	172,663	173,970	776,776	344	269	144,312	39,288	52,816	206,188
221	115	34,186	11,872	14,894	57,654	345	27	37,162	9,145	9,382	21,537
222	439	119,019	60,011	50,754	277,922	346	60	8,455	4,088	5,460	14,754
223	99	28,677	10,159	11,881	51,207	348	91	73,015	15,526	19,208	95,941
224	44	7,475	4,930	4,568	15,434	349	287	116,318	38,734	50,503	265,950
225	393	63,178	42,101	40,110	159,297						
226	115	22,130	9,282	12,328	46,696	35	806	231,452	48,178	67,108	175,814
227	80	33,152	10,322	13,218	54,413	351	19	29,804	5,297	7,666	18,409
228	79	42,151	15,127	15,814	76,770	352	20	6,115	1,256	1,444	3,370
229	61	30,900	8,859	10,403	37,383	353	75	24,663	4,869	7,768	19,722
						354	57	12,632	1,850	2,294	7,561
23	1,286	96,492	63,917	55,546	246,343	355	341	132,436	29,193	40,232	105,047
232	603	46,290	36,421	29,182	129,310	356	31	9,059	1,802	2,598	5,820
233	241	9,415	9,081	7,980	35,480	357	9	8,055	1,143	1,356	5,294
234	6	226	525	351	1,575	358	4	580	168	259	852
235	91	14,556	7,902	8,832	28,407	359	250	8,108	2,600	3,491	9,739
237	80	2,003	561	753	3,719						
238	20	1,496	1,521	888	7,280	36	180	189,931	35,104	45,524	116,545
239	245	22,506	7,906	7,560	40,572	362	8	134,401	19,663	27,350	44,731
						364	53	6,489	2,907	3,456	9,838
24	800	69,692	22,565	26,396	90,037	365	6	2,200	538	481	1,123
242	464	38,386	11,711	15,294	52,548	369	113	46,841	11,996	14,237	60,853
243	57	3,671	1,171	1,285	6,152						
244	96	7,092	3,687	3,227	10,081	37	363	253,034	70,211	82,717	302,165
249	183	20,543	5,996	6,590	21,256	371	129	61,482	17,799	22,635	115,733
						373	16	31,285	6,607	10,090	20,179
25	317	30,278	13,522	14,934	47,164	374	63	157,005	44,484	48,489	162,323
251	299	29,717	13,299	14,653	46,169	379	155	3,262	1,321	1,503	3,930
259	18	561	223	281	995						
						38	197	21,782	8,212	9,905	27,603
26	359	95,791	25,568	30,003	125,993	381	43	4,970	1,826	2,631	6,493
261	10	21,894	2,721	3,313	19,741	382	7	4,043	1,085	1,404	5,453
263	12	7,488	1,970	2,738	14,548	383	48	2,806	1,370	1,631	4,672
264	212	57,706	15,362	19,010	77,315	384	82	5,530	2,553	2,535	7,204
265	125	8,703	5,515	4,942	14,389	386	13	1,379	520	676	1,537
						387	4	3,054	858	1,028	2,244
27	1,545	129,953	38,044	58,614	180,555						
271	500	86,950	19,470	30,663	114,441	39	473	83,212	15,402	17,020	62,965
273	50	9,258	3,500	4,687	13,156	391	61	2,377	657	1,013	3,714
275	840	26,312	11,574	17,353	41,970	393	28	5,440	1,006	1,170	3,458
278	53	827	868	960	1,922	394	32	5,825	2,747	2,547	8,365
279	102	6,606	2,632	4,951	9,066	395	33	2,343	974	1,171	3,433
						396	29	43,630	1,567	1,481	3,674
28	574	131,121	18,813	24,498	157,258	398-99	290	23,597	8,451	9,638	40,321
281	25	11,093	1,209	1,745	21,067						
283	92	11,511	1,872	2,371	11,428						
284	122	16,034	1,934	2,689	20,142						
285	94	20,446	3,717	5,542	30,193						
286	38	6,911	1,100	862	3,868						
287	35	5,683	1,061	1,253	10,107						
289	168	59,443	7,920	10,036	60,453						
29	149	252,500	13,592	19,312	210,418						
291	70	207,505	10,349	14,497	138,141						
295	5	106	147	119	3,228						
299	74	44,889	3,096	4,696	69,049						
30	130	28,203	7,312	8,177	39,675						
301	10	-	3,792	-	-						
302	1	-	1,353	-	-						
306	119	11,482	2,167	2,374	8,470						
31	334	98,711	28,747	30,564	160,434						
311	83	65,262	11,366	13,364	97,187						
312	19	3,637	603	841	4,290						
314	108	21,536	13,837	13,026	45,088						
315	2	-	108	-	-						
316	35	-	1,072	-	-						
319	87	4,892	1,761	1,947	9,046						
32	677	229,302	58,055	64,309	196,273						
321	31	36,034	10,197	11,905	38,984						
322	36	12,313	5,281	5,239	17,729						
323	90	13,914	7,979	7,722	16,991						
324	30	53,752	9,627	12,717	53,056						

Detail may not add to total because of rounding.

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	15,584	\$4,201,233	1,133,074	\$1,567,157	\$7,611,738						
19	1	-	2	-	-	325	297	\$93,221	23,515	\$30,633	\$64,787
195	1	-	2	-	-	326	4	99	75	98	419
20	3,501	275,808	70,464	90,549	606,245	327	45	5,441	1,922	2,351	5,419
201	144	26,915	8,646	13,411	101,608	328	98	3,612	1,263	1,510	3,767
202	422	46,556	8,893	12,190	64,648	329	70	14,123	3,381	4,456	23,344
203	50	21,381	5,208	4,054	25,566	33	678	878,159	175,141	297,157	2,248,743
204	557	20,715	2,837	3,415	33,692	331	230	681,217	116,510	199,703	1,847,109
205	1,765	46,028	22,957	29,848	123,697	332	230	80,279	27,472	44,739	142,799
206	3	28,668	2,824	4,450	132,576	333	46	52,127	7,273	12,256	81,293
207	206	41,605	12,619	14,416	73,077	334	8	23,344	11,867	21,422	93,152
208	21	3,335	505	788	4,294	336	114	19,073	6,689	10,569	30,830
209	333	40,605	5,975	7,977	47,087	339	50	22,119	5,330	8,468	53,560
21	1,103	40,719	37,622	29,431	121,392	34	1,063	519,461	152,484	240,009	1,001,025
211	5	5,030	969	874	18,041	342	246	75,379	27,099	39,108	100,769
212	1,028	32,570	35,496	27,653	98,207	343	75	28,131	8,006	11,626	34,446
213	27	1,314	350	394	2,915	344	259	154,113	45,531	76,652	337,559
214	43	1,805	807	510	2,229	345	28	47,238	10,615	14,437	41,208
22	1,407	425,693	178,205	198,225	911,009	346	67	10,625	4,629	5,574	18,378
221	119	41,951	12,595	17,333	73,705	348	89	37,731	11,460	16,349	123,241
222	437	130,193	62,790	59,748	318,878	349	299	166,244	45,144	76,263	345,424
223	169	72,240	25,044	30,503	142,501	35	794	244,688	55,800	86,845	235,712
224	43	8,327	5,461	5,292	19,211	351	19	33,869	6,509	10,224	23,870
225	387	75,611	43,583	44,971	181,977	352	23	8,186	1,685	2,149	3,984
226	120	26,155	9,699	13,864	50,404	353	77	27,410	5,554	9,060	26,968
227	77	36,125	11,016	15,899	69,716	354	57	15,946	2,763	4,227	11,810
229	55	35,091	8,017	10,615	54,617	355	327	132,738	33,089	51,459	142,398
23	1,109	100,596	65,663	62,454	274,369	356	27	9,338	1,767	3,149	8,788
232	578	49,331	36,772	32,384	146,490	357	8	7,873	1,256	1,602	5,473
233	215	8,972	8,556	7,655	34,426	358	4	722	197	334	990
234	6	280	550	439	1,726	359	252	8,606	2,980	4,641	11,431
235	84	14,401	8,298	10,561	31,506	36	181	226,625	45,463	66,721	187,951
238	24	3,017	2,263	1,728	7,869	362	7	164,843	27,757	43,195	87,777
239	202	24,595	9,224	9,687	52,352	364	48	5,784	2,588	3,503	11,719
24	762	73,212	22,643	29,270	98,390	365	23	3,976	1,378	1,610	3,417
242	474	42,954	12,235	17,402	58,583	369	103	52,022	13,740	18,413	85,038
243	53	3,508	1,037	1,391	6,779	37	345	341,192	86,624	139,168	551,903
244	96	7,768	3,789	3,907	12,716	371	134	62,516	21,149	33,560	161,463
249	139	18,982	5,582	6,570	20,312	373	16	31,085	8,007	12,539	19,044
25	336	34,399	15,386	18,277	59,317	374	59	244,943	56,167	91,414	367,356
251	319	33,775	15,102	17,909	58,038	379	136	2,648	1,301	1,655	4,040
259	17	624	284	368	1,279	38	185	25,550	9,449	11,818	33,873
26	358	106,072	27,676	36,123	145,692	381	40	5,550	2,174	3,436	7,946
261	7	7,177	1,195	1,717	13,006	382	7	4,585	1,447	1,985	7,310
263	11	10,038	2,072	3,388	16,149	383	49	6,226	2,104	2,526	6,963
264	215	80,038	18,434	25,305	99,531	384	85	6,146	2,829	2,759	8,933
265	125	8,819	5,975	5,713	17,006	387	4	3,043	895	1,112	2,721
27	1,547	122,766	37,806	59,828	191,337	39	383	46,936	15,334	17,833	65,077
271	463	81,963	19,132	30,310	118,567	391	57	2,281	666	1,146	3,177
273	48	8,768	3,392	4,891	12,475	393	28	6,268	1,086	1,448	4,584
275	876	26,772	11,625	18,157	47,281	394	36	6,821	3,220	3,059	9,807
278	52	943	985	1,110	2,277	395	33	2,375	1,057	1,339	3,769
279	108	4,320	2,672	5,360	10,737	396	27	3,392	1,693	1,690	3,630
28	568	130,914	20,276	29,322	189,888	398-99	202	25,799	7,612	9,151	40,110
281	25	12,706	1,420	2,330	27,851						
283	93	11,073	2,361	3,091	13,412						
284	119	15,252	1,907	2,707	21,100						
285	95	21,854	4,213	6,766	39,035						
286	35	6,344	1,163	1,375	6,302						
287	33	5,591	1,086	1,486	13,658						
289	168	58,094	8,126	11,567	68,530						
29	146	232,236	15,622	23,645	226,055						
291	61	182,268	11,056	16,898	136,681						
295	8	604	617	381	4,455						
299	77	49,364	3,949	6,366	84,919						
30	95	27,301	7,321	8,708	37,853						
301	12	-	3,566	-	-						
302	1	-	1,649	-	-						
306	82	11,361	2,106	2,776	9,422						
31	326	95,887	29,307	33,789	167,462						
311	77	60,396	11,237	14,785	95,166						
312	21	3,444	534	802	5,328						
314	110	22,795	14,360	14,317	46,784						
316	32	3,106	1,082	1,546	5,708						
319	86	6,146	2,094	2,339	14,476						
32	696	253,019	64,786	87,982	260,445						
321	24	51,131	9,988	15,092	53,569						
322	32	12,683	5,430	6,157	19,330						
323	96	15,460	8,583	10,103	22,084						
324	30	57,249	10,629	17,582	67,726						

Detail may not add to total because of rounding.



## 1924 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	15,117	\$4,191,771	1,068,229	\$1,463,872	\$6,480,259						
19	1	-	103	-	-	325	294	\$96,755	22,119	\$30,170	\$61,405
195	1	-	103	-	-	326	5	137	179	292	490
						327	49	6,065	2,063	2,796	4,699
20	3,330	291,340	71,324	93,143	626,968	328	111	3,802	1,511	2,317	5,732
201	149	30,675	9,007	14,489	112,971	329	66	11,189	3,030	4,508	18,925
202	404	40,189	8,277	12,238	61,430						
203	59	24,791	5,233	4,381	25,432	33	595	779,542	150,913	238,697	1,646,884
204	558	19,769	2,692	3,437	35,183	331	179	568,926	97,780	152,838	1,325,308
205	1,612	48,181	23,542	31,390	127,362	332	212	78,111	20,544	32,760	96,536
206	3	30,439	2,829	4,541	127,594	333	48	53,440	7,953	13,328	75,380
207	205	49,202	13,218	13,514	78,505	334	8	25,237	11,646	18,511	82,731
208	22	2,650	574	947	4,305	336	105	27,247	8,173	13,220	27,254
209	318	45,444	5,952	8,206	54,186	339	43	26,581	4,817	8,040	39,675
21	970	42,203	35,427	27,132	123,428	34	1,010	618,880	153,556	249,761	868,934
211	6	4,735	900	926	23,030	342	252	79,870	26,531	37,927	94,836
212	905	34,701	33,491	25,351	95,415	343	77	22,988	7,399	11,377	31,780
213	30	1,426	344	405	2,860	344	259	230,125	50,635	89,865	344,794
214	29	1,341	692	450	2,123	345	25	31,829	6,547	8,319	30,548
						346	64	12,311	4,936	6,354	20,383
22	1,378	421,387	165,824	184,090	792,228	348	96	85,084	16,170	25,163	108,390
221	123	44,454	12,026	16,194	69,342	349	237	156,673	41,338	70,756	238,203
222	419	123,890	57,922	56,556	275,736						
223	170	68,355	21,755	25,051	117,610	35	797	248,914	52,876	82,794	221,880
224	45	9,007	4,791	4,912	14,570	351	20	31,576	6,512	10,168	26,482
225	369	72,319	40,089	42,424	158,635	352	20	6,705	1,150	1,510	3,983
226	123	30,281	10,773	14,849	53,024	353	76	28,566	5,153	8,333	19,697
227	76	37,670	10,740	13,820	54,777	354	59	15,652	2,639	3,987	8,759
229	53	35,411	7,728	10,284	48,534	355	341	139,386	31,628	50,052	132,863
						356	27	7,766	1,650	2,568	9,820
23	1,122	97,515	63,908	59,083	247,927	357	6	8,363	1,100	1,367	4,569
232	565	46,547	34,568	30,013	129,744	358	4	736	191	282	828
233	216	9,638	10,201	7,828	34,691	359	244	10,164	2,853	4,527	14,879
234	8	865	708	657	2,327						
235	80	13,743	7,434	9,633	25,985	36	195	249,020	48,357	69,936	209,913
238	22	2,278	2,029	1,558	5,039	362	6	178,421	26,658	39,635	89,723
239	231	24,444	8,968	9,394	50,141	364	48	5,976	2,584	3,572	10,678
						365	17	3,682	1,151	1,301	2,678
24	751	68,948	28,521	30,497	89,014	369	124	60,941	17,964	25,428	106,834
242	466	40,182	12,089	18,449	52,658						
243	53	3,428	946	1,281	5,937	37	319	349,320	66,105	103,582	405,423
244	93	7,478	9,856	3,921	12,084	371	131	60,983	19,749	31,615	143,355
249	139	17,860	5,630	6,846	18,335	373	15	28,077	6,882	10,478	17,870
						374	60	258,044	38,501	60,277	241,309
25	337	34,993	14,350	18,161	59,580	379	113	2,216	973	1,212	2,889
251	322	34,388	14,130	17,855	58,516						
259	15	605	220	306	1,064	38	180	24,310	9,241	12,661	34,637
						381	41	5,814	2,302	3,812	8,257
26	352	108,034	28,171	37,262	139,798	382	6	4,291	1,389	2,142	7,169
261	10	5,943	1,369	1,637	16,188	383	48	4,142	1,623	2,505	6,315
263	10	9,648	1,981	3,224	16,947	384	82	6,509	2,975	2,966	9,477
264	214	83,036	19,034	26,809	90,870	387	3	3,554	952	1,236	3,419
265	118	9,407	5,787	5,592	15,793						
						39	425	50,072	15,391	18,942	64,525
27	1,507	129,741	38,110	63,405	199,099	391	55	3,318	723	1,239	3,189
271	431	88,254	19,288	32,505	124,520	393	27	6,588	1,046	1,438	4,337
273	49	8,421	3,503	5,234	14,501	394	34	7,914	3,117	3,362	8,775
275	866	27,208	11,626	18,896	46,953	395	32	2,553	987	1,340	3,333
278	51	1,146	931	1,065	2,457	396	24	2,780	1,685	1,738	3,543
279	110	4,712	2,762	5,705	10,668	398-99	253	26,919	7,833	9,825	41,348
28	547	128,073	18,877	27,679	177,870						
281	17	6,150	841	1,490	17,486						
283	94	12,716	1,957	2,529	15,538						
284	126	15,902	2,505	3,583	27,801						
285	92	21,831	3,977	6,555	39,678						
286	30	6,303	897	973	2,619						
287	29	5,412	1,000	1,321	11,468						
289	159	59,759	7,700	11,228	63,280						
29	215	140,684	13,902	21,892	145,838						
291	80	123,561	10,816	17,538	112,633						
295	9	1,221	581	771	5,404						
299	126	15,902	2,505	3,583	27,801						
30	85	27,489	6,269	8,077	35,477						
301	9	-	2,994	-	-						
302	1	-	1,237	-	-						
306	75	11,279	2,038	2,855	9,093						
31	303	116,746	25,262	29,125	145,861						
311	66	84,812	8,804	11,757	81,839						
312	18	3,604	489	722	4,011						
314	108	21,129	13,259	13,207	47,201						
316	34	2,902	1,105	1,547	5,113						
319	77	4,299	1,605	1,892	7,697						
32	698	264,560	61,742	87,953	244,975						
321	22	56,530	9,394	14,559	42,999						
322	116	26,634	12,369	14,725	38,523						
323	7	501	154	231	897						
324	28	62,947	10,923	18,355	71,305						

Detail may not add to total because of rounding.

## 1925 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

19

(Money figures in thousands of dollars)

IC code	Number of establish- ments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establish- ments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	15,172	\$4,332,651	1,080,055	\$1,527,581	\$6,879,601						
20	3,766	341,728	70,978	97,571	638,946	328	111	\$4,402	1,539	\$2,089	\$6,060
01	145	28,475	8,500	14,055	126,110	329	64	11,799	3,158	4,720	18,483
02	953	43,938	7,972	12,366	65,649						
03	62	27,988	5,859	4,879	30,122	33	623	859,907	158,426	263,993	1,681,992
04	538	18,782	2,470	3,163	38,575	331	214	652,808	104,281	171,520	1,349,304
05	1,530	52,317	23,653	33,078	139,066	332	210	70,345	20,680	33,833	59,460
06	3	30,099	2,954	4,635	101,154	333	41	53,116	7,008	12,474	79,999
07	182	88,932	12,733	15,651	73,187	334	11	31,127	14,880	26,919	112,396
08	24	4,103	520	771	4,269	336	106	17,208	6,051	9,971	34,752
09	329	47,094	6,317	8,973	60,814	339	41	35,303	5,526	9,276	46,081
21	856	35,141	34,230	26,442	124,823	34	990	580,857	144,936	234,797	941,872
11	6	4,766	840	874	22,830	342	250	80,158	27,399	40,056	109,195
12	794	26,408	32,154	24,438	96,146	343	79	24,169	7,799	11,664	36,424
13	30	1,537	311	410	2,974	344	259	232,623	48,536	85,058	368,685
14	26	2,430	925	720	2,873	345	24	30,592	6,198	8,178	32,522
22	1,365	442,438	182,246	215,215	900,445	346	68	13,864	5,066	6,630	21,665
21	121	45,021	12,414	17,395	69,490	348	98	83,185	15,723	25,237	112,406
22	435	133,775	72,166	77,074	344,638	349	212	116,266	34,215	57,974	260,975
23	156	64,743	19,343	22,991	110,448	35	769	258,517	53,887	86,399	231,467
24	46	9,642	4,827	5,142	15,882	351	19	29,814	5,618	8,953	21,299
25	366	78,619	44,675	52,319	187,241	352	22	6,040	1,365	1,893	4,656
26	115	29,314	10,166	15,050	61,172	353	77	28,946	5,334	8,987	22,452
27	74	34,411	9,372	13,276	58,169	354	56	15,265	2,576	4,105	10,347
29	52	47,913	9,283	11,968	53,405	355	344	150,355	33,644	54,306	144,950
23	1,057	93,049	62,175	60,314	255,502	356	25	9,375	1,574	2,655	11,233
32	541	46,577	36,905	33,024	142,661	357	4	7,999	1,199	1,407	6,216
33	185	8,209	7,429	6,974	30,979	358	3	822	173	313	887
34	6	772	517	423	1,596	359	219	9,901	2,404	3,780	9,427
35	78	12,462	6,905	9,454	27,734	36	199	260,437	48,644	70,113	214,737
38	17	1,490	1,211	858	4,880	362	9	174,015	25,835	38,819	81,368
39	230	23,539	9,208	9,581	47,652	364	52	6,386	3,133	4,274	11,404
24	761	83,493	22,962	30,630	94,702	365	18	4,894	1,128	1,412	3,197
242	483	49,165	12,160	18,037	54,104	369	120	75,142	18,548	25,608	118,768
243	55	3,974	1,097	1,332	5,696	37	284	306,015	63,469	101,212	393,573
244	87	7,227	3,727	3,843	12,318	371	110	57,158	22,458	36,451	166,520
249	136	23,127	5,978	7,418	22,584	372	1	-	187	-	-
25	339	39,634	15,777	20,241	61,114	373	13	-	4,726	-	-
251	324	39,027	15,551	19,905	59,885	374	56	220,567	35,234	55,846	212,083
259	15	607	226	336	1,229	379	104	2,191	864	1,109	2,646
26	343	115,274	27,653	37,745	150,075	38	165	24,568	9,173	12,305	37,039
261	11	5,392	1,232	1,931	11,464	381	40	6,471	2,395	4,114	10,111
263	10	12,696	1,780	3,105	18,622	382	9	-	1,522	-	-
264	205	87,234	18,810	26,940	101,952	383	34	2,264	967	1,452	4,321
265	117	9,952	5,831	5,769	18,037	384	80	7,136	3,230	3,309	11,272
27	1,479	143,089	38,928	65,382	207,876	387	2	-	1,059	-	-
271	420	99,778	19,804	33,284	132,264	39	416	44,023	15,347	18,911	66,230
273	44	8,082	3,186	5,195	11,929	391	54	2,761	649	1,121	3,239
275	856	28,270	11,888	19,465	49,100	393	25	7,212	1,042	1,494	4,295
278	49	1,201	902	1,067	2,535	394	35	5,276	3,016	3,115	10,408
279	110	5,758	3,148	6,371	12,048	395	32	2,622	967	1,343	3,644
28	543	128,405	18,557	29,152	189,740	396	22	2,940	1,680	1,800	4,480
281	24	16,480	1,529	2,444	30,318	398-99	248	23,212	7,993	10,038	40,164
283	88	14,120	2,159	3,271	18,670						
284	125	14,001	2,540	4,250	20,930						
285	91	23,317	3,928	6,590	44,311						
286	30	6,390	908	889	3,357						
287	29	5,754	997	1,300	12,098						
289	156	48,343	6,496	10,408	60,056						
29	160	193,944	16,112	26,172	236,837						
291	74	137,357	11,415	18,593	139,305						
295	6	854	635	396	5,234						
299	80	55,733	4,062	7,183	92,298						
30	80	28,188	6,411	8,185	38,847						
301	9	-	2,844	-	-						
302	1	-	1,382	-	-						
306	70	11,387	2,185	2,968	11,068						
31	285	92,066	25,029	29,671	149,586						
311	59	58,475	9,131	12,271	89,165						
312	19	3,152	575	840	5,088						
314	103	22,943	12,418	12,787	42,120						
316	32	2,574	1,055	1,432	5,319						
319	72	4,922	1,850	2,341	7,894						
32	692	261,878	65,115	93,131	264,198						
321	48	57,600	14,116	21,136	59,020						
322	86	20,913	8,358	10,137	28,039						
323	7	695	259	392	1,589						
324	29	71,925	11,314	19,784	75,568						
325	296	86,945	24,079	31,640	69,537						
326	4	90	79	111	520						
327	47	7,509	2,213	3,122	5,382						

Detail may not add to total because of rounding.

## 1926 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	14,546	\$4,378,362	1,098,225	\$1,650,883	\$6,921,950						
20	3,482	308,021	72,211	100,816	666,945	328	134	\$5,595	1,983	\$2,490	\$7,275
201	143	28,288	8,547	14,186	130,892	329	57	10,338	3,153	4,851	18,294
202	374	41,700	7,102	10,974	62,031						
203	52	27,117	5,312	4,736	29,061	33	586	941,843	158,602	274,904	1,592,588
204	546	15,488	2,138	2,742	28,904	331	175	721,750	103,139	179,121	1,236,316
205	1,522	53,186	24,358	34,959	147,806	332	208	67,051	19,893	32,963	98,912
206	3	34,094	2,664	4,470	98,830	333	47	56,857	7,783	13,240	89,673
207	178	44,730	12,310	13,802	88,402	334	9	30,423	14,274	25,246	93,313
208	342	18,864	3,466	5,947	21,184	336	105	17,131	6,221	10,605	28,883
209	322	44,554	6,314	9,000	59,835	339	42	48,631	7,292	13,729	45,491
21	763	33,507	35,047	27,631	126,249	34	970	511,249	141,250	227,576	943,033
211	5	1,920	1,067	1,090	20,027	342	241	85,677	27,956	41,500	106,299
212	711	27,474	32,495	25,356	99,152	343	79	26,522	7,959	12,406	37,685
213	28	1,242	290	380	2,834	344	274	168,076	42,926	73,585	346,250
214	19	2,871	1,195	805	4,236	345	22	41,044	8,275	11,407	30,668
						346	64	13,234	5,100	6,763	23,017
22	1,304	440,119	178,028	214,559	875,655	348	92	38,161	10,072	15,675	104,924
221	111	48,062	14,157	20,400	80,855	349	198	138,535	38,962	66,240	294,190
222	439	136,062	72,098	77,941	348,394						
223	147	57,058	17,705	20,719	95,035	35	756	254,353	57,248	94,162	256,628
224	42	8,615	4,459	4,718	14,317	351	20	30,126	5,757	9,525	27,447
225	349	81,056	45,334	56,462	193,775	352	22	6,303	1,334	1,977	5,509
226	102	30,871	7,506	11,059	42,097	353	75	29,683	5,682	9,638	24,829
227	67	35,703	8,674	12,352	52,524	354	55	9,734	2,171	3,383	10,112
229	47	42,692	8,095	10,908	48,658	355	337	149,871	36,546	60,269	159,340
						356	31	10,710	1,777	3,240	11,786
23	1,017	96,727	64,359	64,865	260,196	357	6	7,725	1,574	2,205	6,831
232	522	47,015	38,658	36,027	150,145	358	3	1,156	239	429	1,370
233	166	7,513	6,998	6,914	31,241	359	207	9,045	2,168	3,496	9,402
234	6	1,392	602	501	2,062						
235	71	12,695	6,958	9,716	29,029	36	190	278,971	50,548	78,600	246,009
238	15	985	1,053	740	5,991	362	9	182,917	27,795	45,762	97,521
239	237	27,127	10,090	10,967	41,728	364	46	5,086	2,038	2,939	9,050
						365	17	3,806	922	1,129	2,741
24	721	77,095	22,484	30,790	98,119	369	118	87,162	19,793	28,770	136,695
242	472	50,414	12,660	19,027	58,478						
243	47	3,059	904	1,299	6,035	37	299	379,560	77,794	127,999	417,350
244	83	5,486	3,321	3,366	12,079	371	110	62,923	22,814	37,782	160,764
249	119	18,136	5,599	7,098	21,527	372	3	1,143	262	507	823
						373	12	18,286	7,121	10,556	19,524
25	329	37,467	15,165	20,020	62,389	374	87	295,518	46,803	78,067	234,031
251	317	36,923	14,944	19,708	60,942	379	87	1,690	794	1,087	2,208
259	12	544	221	312	1,447						
						38	157	25,238	9,706	13,626	39,649
26	341	121,223	27,760	37,239	148,619	381	37	6,747	2,649	4,511	10,278
261	14	5,949	1,458	1,990	12,411	382	9	-	1,693	-	-
263	9	11,639	1,701	2,864	16,957	383	29	1,924	728	1,180	3,801
264	200	93,871	18,711	26,415	100,819	384	80	7,133	3,478	3,741	11,676
265	118	9,764	5,890	5,970	18,432	387	2	-	1,158	-	-
27	1,477	128,357	40,022	70,409	223,408	39	420	47,804	15,930	19,700	63,592
271	1,273	113,407	32,303	56,413	191,888	391	50	2,503	563	1,076	3,125
273	48	9,359	3,994	7,258	16,507	393	25	7,225	1,123	1,662	4,509
278	46	1,038	884	1,025	2,321	394	35	7,278	2,883	3,033	9,013
279	110	4,553	2,841	5,713	12,692	395	33	2,710	991	1,396	3,603
						396	21	3,062	1,721	1,957	4,694
28	546	131,781	19,682	31,444	197,455	398-99	256	25,026	8,649	10,576	38,648
281	21	15,267	1,306	2,212	29,133						
283	92	15,013	2,151	3,274	16,589						
284	125	18,676	2,265	3,221	21,793						
285	97	23,916	4,594	8,086	45,581						
286	27	5,470	818	934	3,971						
287	29	8,892	1,845	2,983	13,102						
289	155	44,547	6,703	10,734	67,286						
29	158	182,127	17,518	86,186	252,743						
291	77	145,035	12,627	78,149	159,115						
295	8	1,457	757	762	8,126						
299	73	35,635	4,134	7,275	85,502						
30	74	28,634	6,283	8,082	38,975						
301	10	-	2,625	-	-						
302	1	-	1,377	-	-						
306	63	11,446	2,281	3,139	12,765						
31	264	88,972	24,667	30,184	148,849						
311	60	57,105	9,322	12,744	88,776						
312	18	2,985	617	922	4,459						
314	88	21,174	11,707	12,427	40,678						
316	29	2,858	1,108	1,613	5,250						
319	69	4,850	1,913	2,478	9,686						
32	692	265,314	63,921	92,091	263,499						
321	48	58,087	13,977	20,958	53,588						
322	87	20,365	8,654	10,672	32,772						
323	10	1,212	431	680	2,902						
324	28	81,138	11,174	19,517	74,373						
325	277	81,531	22,308	29,690	68,006						
326	4	135	165	312	490						
327	47	6,913	2,076	2,921	5,799						

Detail may not add to total because of rounding.



(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	17,035	\$4,454,324	1,088,016	\$1,586,849	\$6,535,626						
20	4,295	355,627	74,481	106,573	671,357	328	215	\$6,542	2,202	\$2,779	\$7,348
201	186	24,314	8,413	14,352	125,583	329	67	13,703	4,267	6,357	20,936
202	437	50,931	7,438	11,909	62,436						
203	54	29,988	5,210	4,899	26,342	33	561	1,024,607	152,754	267,609	1,362,652
204	548	16,887	2,426	3,452	38,938	331	140	792,901	97,295	171,253	1,028,631
205	1,912	60,958	25,921	36,434	149,248	332	219	68,543	19,739	32,840	85,478
206	3	34,188	2,539	4,330	96,396	333	43	56,589	7,796	14,086	83,260
207	246	49,568	11,852	14,102	89,137	334	11	42,565	16,598	29,765	97,610
208	526	40,121	4,501	7,399	24,088	336	106	10,063	31,47	5,287	26,077
209	383	48,672	6,181	9,696	59,189	339	42	53,946	8,179	14,378	41,596
21	634	36,140	33,828	26,146	121,727	34	997	469,081	131,315	210,747	849,010
211	5	5,241	843	883	17,855	342	258	75,292	26,718	39,835	100,710
212	583	25,887	31,628	23,942	96,180	343	77	23,371	7,711	11,996	34,328
213	27	1,482	318	473	3,578	344	295	158,891	38,516	65,515	311,303
214	19	3,530	1,039	848	4,114	345	18	35,996	6,884	9,765	25,424
22	1,416	456,177	186,988	232,341	893,164	346	59	11,646	4,879	6,747	22,319
221	109	36,777	11,176	16,428	60,624	348	104	37,647	10,981	16,559	96,695
222	489	137,908	73,763	79,849	356,678	349	186	126,238	35,626	60,330	258,231
223	139	55,073	17,314	21,480	93,738	35	811	242,539	54,509	91,695	238,061
224	42	8,754	3,878	4,537	12,706	351	15	10,753	2,731	4,309	12,364
225	375	91,676	49,137	64,366	200,969	352	18	3,454	1,056	1,582	3,294
226	112	23,830	7,484	11,564	33,157	353	70	21,695	4,763	8,141	19,316
227	65	34,474	8,537	12,088	45,468	354	62	12,689	2,359	3,806	9,495
228	13	5,488	2,855	4,108	21,760	355	335	162,434	36,088	61,557	158,450
229	72	62,197	12,844	17,921	68,064	356	29	11,218	2,660	4,706	14,332
23	1,935	94,307	80,148	84,577	322,838	357	10	9,328	1,716	2,357	7,672
232	1,162	50,191	49,299	48,750	188,126	358	4	962	286	524	1,773
233	344	11,007	13,289	13,245	51,639	359	268	10,006	2,850	4,713	11,365
234	8	836	700	630	2,237	36	190	261,730	47,779	75,537	231,645
235	118	14,438	7,747	12,191	30,914	362	11	171,359	25,955	43,680	106,012
237	54	1,223	418	788	3,706	364	45	2,909	1,721	2,458	7,151
238	18	2,336	1,737	1,437	4,861	365	17	3,726	826	1,086	2,471
239	231	14,276	6,958	7,536	41,355	369	117	83,736	19,277	28,313	116,011
24	862	76,055	21,791	31,212	93,450	37	263	296,509	58,050	95,284	323,129
242	583	49,611	11,317	18,555	54,415	371	125	53,454	17,115	28,334	112,262
243	45	2,631	791	1,088	5,043	372	4	1,435	548	920	1,815
244	87	6,126	3,797	3,849	11,862	373	11	10,741	3,094	5,395	9,927
249	147	17,687	5,886	7,720	22,130	374	58	228,920	36,552	59,515	196,710
25	455	37,480	17,471	22,960	64,138	379	65	1,959	741	1,120	2,415
251	440	36,938	17,293	22,679	62,841	38	193	26,115	10,344	15,087	43,287
259	15	542	178	281	1,297	381	43	7,414	2,729	4,828	10,429
26	357	117,455	26,725	38,588	146,653	382	9	4,929	1,647	2,622	9,289
261	11	5,948	1,176	2,033	10,683	383	35	2,137	817	1,288	3,851
263	12	11,056	1,738	3,007	16,626	384	103	7,526	3,924	4,656	14,630
264	206	89,454	17,783	27,128	99,091	387	3	4,109	1,227	1,693	5,088
265	128	10,997	6,028	6,420	20,253	39	494	49,596	16,336	21,644	68,457
27	1,674	151,198	45,151	79,342	245,008	391	76	3,060	848	1,558	4,009
271	1,482	137,603	38,741	67,568	223,340	393	26	7,493	1,058	1,609	4,130
273	30	6,552	2,449	4,064	7,916	394	42	4,456	2,544	2,658	8,796
278	51	1,141	980	1,210	2,332	395	37	2,664	992	1,501	3,682
279	111	5,902	2,981	6,500	11,420	396	22	4,057	1,965	2,485	5,845
28	591	125,474	19,911	31,699	191,489	398-99	291	27,866	8,929	11,833	41,995
281	19	10,290	975	1,628	27,848						
283	95	14,044	2,146	3,026	19,885						
284	129	14,807	2,197	3,357	25,666						
285	106	25,104	4,471	8,226	41,884						
286	27	4,800	881	1,002	4,268						
287	34	15,303	2,058	3,173	8,016						
289	181	41,126	7,183	11,287	63,922						
29	150	259,501	15,769	28,081	224,241						
291	71	225,860	11,749	20,943	143,049						
295	5	808	349	411	1,954						
299	74	32,833	3,671	6,727	79,238						
30	63	18,441	6,049	7,904	35,823						
301	7	-	2,107	-	-						
302	1	-	1,662	-	-						
306	55	7,715	2,280	2,925	11,584						
31	302	78,034	27,230	33,315	166,456						
311	61	46,559	10,256	14,355	103,801						
312	19	3,416	617	992	3,871						
314	100	21,383	12,883	13,522	42,309						
315	3	244	187	216	461						
316	37	1,813	1,184	1,629	4,727						
319	82	4,619	2,103	2,601	11,287						
32	792	278,258	61,387	86,508	243,041						
321	58	58,508	13,674	18,915	48,275						
322	86	17,900	8,170	10,418	32,609						
323	17	1,627	513	754	2,206						
324	30	89,456	10,381	17,983	69,712						
325	267	83,340	20,058	26,094	55,473						
326	5	416	208	396	550						
327	47	6,766	1,914	2,812	5,932						

Detail may not add to total because of rounding.

## 1928 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital Invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital Invested	Number of employees	Wages and salaries	Value of production
Total	16,568	\$4,367,538	1,065,106	\$1,573,234	\$6,609,855						
20	4,130	327,431	72,961	105,371	657,315	33	567	\$1,040,828	148,677	\$267,723	\$1,421,978
201	175	28,555	8,513	14,724	117,352	331	150	838,863	97,055	180,866	1,056,321
202	400	48,988	6,916	11,444	62,526	332	212	64,188	18,634	30,311	74,345
203	56	29,990	5,393	4,683	29,260	333	38	47,951	7,315	12,018	71,153
204	505	16,133	2,324	3,304	35,820	334	17	36,927	13,828	24,599	137,556
205	1,920	65,208	26,813	38,918	153,977	336	106	15,953	5,886	9,504	28,244
206	3	27,654	2,237	3,861	77,724	339	44	36,946	5,959	10,425	54,359
207	216	55,339	11,184	13,381	90,999						
208	527	37,473	3,931	6,500	22,592	34	956	503,756	133,916	216,557	867,683
209	328	18,091	5,650	8,556	47,065	342	233	66,870	21,448	31,470	78,080
						343	70	24,518	6,934	10,474	28,562
21	564	35,252	32,405	24,697	113,248	344	300	197,870	47,688	82,540	370,921
211	5	5,392	620	686	14,789	345	17	30,139	7,006	9,587	25,330
212	520	24,597	30,420	22,908	91,561	346	58	17,571	8,018	11,368	38,264
213	28	2,315	392	480	3,910	347	38	522	323	517	1,138
214	11	2,948	973	623	2,988	348	108	44,437	10,616	16,470	98,562
						349	132	121,829	31,883	54,131	226,826
22	1,368	408,136	185,487	236,872	921,112						
221	111	41,211	11,976	18,163	67,585	35	817	237,514	55,784	95,471	251,167
222	289	70,027	41,530	48,710	257,651	351	27	12,451	2,729	4,384	11,978
223	128	47,417	16,300	20,787	94,243	352	17	3,536	1,051	1,564	4,205
224	42	7,872	3,697	4,305	11,797	353	64	17,676	4,132	7,279	19,869
225	357	95,829	51,833	71,216	220,559	354	84	7,852	2,112	3,370	10,796
226	117	28,469	8,304	13,474	39,394	355	326	155,738	37,646	65,060	167,228
227	64	32,510	8,169	11,776	43,330	356	28	16,294	2,925	5,537	14,717
228	188	56,932	31,634	31,625	125,031	357	10	10,852	1,866	2,669	7,720
229	72	27,869	12,044	16,816	61,522	358	4	2,541	505	944	3,457
						359	257	10,574	2,818	4,664	11,197
23	1,971	93,759	82,923	85,027	325,663						
231	787	22,076	22,535	27,258	93,067	36	166	234,163	48,799	78,751	259,823
232	396	27,630	29,052	22,103	93,313	363	4	3,550	698	1,071	2,854
233	345	10,738	15,258	15,287	61,562	364	35	2,219	1,244	1,919	6,294
234	8	871	786	780	2,770	365	27	11,022	8,755	11,922	53,082
235	120	13,723	7,417	10,345	28,615	369	100	217,372	38,102	63,839	197,593
237	59	1,314	449	791	2,997						
238	21	2,306	1,294	1,245	6,085	37	238	285,712	51,773	83,625	276,962
239	235	15,101	6,132	7,218	37,254	371	123	62,252	20,348	33,858	128,122
						372	4	1,360	658	1,225	3,011
24	829	65,018	15,662	23,426	74,852	373	11	7,989	2,281	3,876	8,387
242	581	46,370	10,422	16,909	46,723	374	56	212,906	27,988	43,946	136,121
243	39	2,080	644	892	4,507	379	44	1,205	498	720	1,321
244	83	6,201	3,342	3,411	10,885						
249	126	10,367	1,254	2,214	12,737	38	185	31,165	10,274	15,326	42,776
						381	40	7,806	2,795	5,101	12,787
25	412	35,747	15,039	20,117	56,877	382	10	5,270	1,775	2,800	8,839
251	395	35,301	14,828	19,804	55,502	383	37	2,766	984	1,600	4,224
259	17	446	211	313	1,375	384	95	5,653	3,516	4,173	11,621
						387	3	9,670	1,204	1,652	5,305
26	322	116,120	24,775	36,474	148,105						
261	4	3,664	1,099	1,984	10,376	39	458	42,108	15,250	19,953	67,905
263	7	10,367	1,254	2,214	12,737	391	65	2,957	801	1,553	3,743
264	182	90,686	16,337	25,498	102,028	393	26	3,804	920	1,396	3,390
265	129	11,403	6,085	6,778	22,964	394	37	4,527	2,602	2,737	8,756
						395	33	2,645	971	1,487	3,688
27	1,649	153,956	43,922	78,835	243,088	396	22	3,999	1,825	2,121	5,048
271	1,509	146,869	40,071	71,789	229,209	398-99	275	24,176	8,131	10,659	43,280
278	57	2,238	1,371	1,787	4,031						
279	83	4,849	2,480	5,259	9,848						
28	666	124,478	19,924	32,666	202,624						
281	17	4,598	841	1,334	34,448						
283	103	11,532	2,328	3,555	23,597						
284	114	13,580	1,945	3,125	26,466						
285	105	26,170	4,292	8,098	41,178						
286	25	4,818	773	879	3,348						
287	34	15,454	1,975	2,925	8,516						
289	268	48,326	7,770	12,750	65,071						
29	146	189,690	15,265	27,182	236,350						
291	77	144,458	10,155	17,977	130,261						
295	2	-	231	-	-						
299	67	-	4,879	-	-						
30	55	24,301	4,983	6,795	31,780						
301	7	10,889	2,245	3,076	16,473						
306	48	13,412	2,738	3,719	15,307						
31	294	73,710	27,456	33,499	191,007						
311	60	41,916	9,950	13,957	108,582						
312	18	2,396	399	635	3,877						
314	97	20,718	13,453	14,157	50,086						
315	3	282	158	160	386						
316	39	1,801	1,286	1,857	6,111						
319	77	6,597	2,210	2,733	21,965						
32	775	284,694	59,831	84,867	239,540						
321	58	60,519	13,926	19,770	49,338						
322	82	17,549	8,421	10,821	33,957						
323	16	1,070	491	792	2,276						
324	34	95,465	9,520	16,617	65,746						
325	241	80,713	17,693	23,232	50,458						
326	20	5,501	2,379	3,268	5,565						
327	272	13,334	4,125	5,421	14,298						
329	52	10,541	3,276	4,946	17,902						

Detail may not add to total because of rounding.

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	16,502	\$4,496,080	1,107,791	\$1,685,440	\$7,301,344						
20	4,112	364,460	73,766	111,596	685,832	33	562	\$1,054,737	153,425	\$277,859	\$1,651,067
201	171	25,676	7,975	13,314	123,952	331	155	864,455	101,621	186,937	1,268,072
202	378	49,655	6,620	11,023	59,399	332	197	60,902	19,425	33,298	89,874
203	71	33,359	5,791	4,926	27,891	333	39	43,204	7,569	13,098	74,603
204	463	16,066	2,216	3,251	24,963	334	17	37,679	13,640	24,834	120,099
205	1,815	67,396	27,385	38,931	155,972	336	112	15,101	4,505	7,603	36,385
206	3	22,792	2,166	3,879	73,645	339	42	33,396	6,665	12,089	62,034
207	194	61,121	11,476	19,947	96,879						
208	680	38,597	4,527	8,014	76,373	34	933	534,903	137,900	230,515	974,983
209	337	49,798	5,610	8,311	46,758	342	215	73,344	21,892	33,143	79,171
						343	70	22,149	6,775	10,517	31,439
21	491	31,144	29,127	24,053	113,583	344	304	217,003	52,181	91,779	420,752
211	5	4,513	397	399	7,706	345	22	29,310	7,318	11,536	41,176
212	445	22,097	27,639	22,584	99,402	346	59	19,705	7,273	10,049	33,537
213	29	2,456	354	508	4,821	347	40	536	330	549	1,157
214	12	2,078	737	562	1,654	348	106	51,225	10,729	17,245	105,433
						349	117	121,631	31,402	55,697	262,318
22	1,325	451,844	191,791	246,201	953,662						
221	105	39,441	10,534	16,645	66,353	35	800	249,320	62,956	109,129	294,896
222	281	64,837	41,130	48,472	258,102	351	22	11,906	2,718	4,348	13,350
223	118	57,589	15,516	20,791	93,083	352	14	3,530	978	1,472	3,480
224	38	7,350	3,568	4,381	12,511	353	65	15,713	4,074	7,138	23,673
225	358	107,110	57,659	79,898	241,077	354	83	11,713	2,463	4,285	11,301
226	105	28,494	7,634	12,207	33,291	355	334	168,894	44,414	77,163	204,492
227	58	30,471	7,994	11,312	44,934	356	25	13,137	2,809	5,172	12,909
228	193	59,255	35,499	34,753	134,855	357	10	8,701	1,653	2,333	8,323
229	69	57,297	12,257	17,742	69,456	358	4	5,244	787	1,994	4,622
						359	243	10,482	3,060	5,224	12,746
23	2,068	91,976	88,068	88,410	347,460						
231	928	20,365	24,977	29,729	102,065	36	163	268,597	57,923	95,292	314,138
232	374	25,921	29,780	22,365	97,747	363	3	5,716	750	1,033	3,642
233	354	12,167	16,588	16,116	63,580	364	31	2,055	1,004	1,614	5,553
234	7	1,109	683	733	2,826	365	31	16,428	11,499	15,529	74,972
235	100	13,278	6,846	9,806	28,016	369	98	244,398	44,670	77,116	229,971
237	51	1,204	392	667	2,592						
238	25	2,854	1,666	1,503	8,588	37	237	291,926	62,636	106,241	395,193
239	229	15,078	7,136	7,491	42,046	371	122	68,527	26,098	43,744	183,342
						372	5	2,022	937	1,714	3,837
24	738	67,406	18,137	25,063	73,865	373	14	14,186	3,814	5,911	14,116
242	496	46,620	9,651	15,249	40,044	374	60	205,946	31,302	54,222	192,267
243	35	2,036	595	831	4,147	379	36	1,245	485	650	1,631
244	80	6,096	3,097	3,252	10,632						
249	127	12,654	4,794	5,731	19,042	38	180	27,673	10,907	17,287	48,823
						381	39	8,507	3,254	6,282	15,442
25	386	34,568	15,089	20,771	60,524	382	10	-	2,056	-	-
251	370	34,288	14,876	20,464	59,202	383	36	2,656	875	1,601	3,910
259	16	280	213	307	1,322	384	93	5,461	3,492	4,263	11,472
						387	2	-	1,230	-	-
26	318	120,853	25,196	37,052	147,472						
261	5	4,300	890	1,835	9,867	39	436	41,231	15,899	21,238	63,365
263	9	10,018	1,156	2,034	9,043	391	60	2,956	721	1,416	3,547
264	173	94,224	17,030	26,271	107,275	393	24	5,184	677	1,158	2,806
265	131	12,311	6,120	6,912	21,287	394	36	5,489	3,066	3,184	4,697
						395	34	2,676	987	1,522	3,937
27	1,951	159,942	45,886	84,764	262,889	396	20	4,044	2,078	2,570	6,770
271	1,773	151,420	41,225	76,050	245,493	398-99	262	20,882	8,370	11,388	41,608
278	75	3,112	1,752	2,458	4,570						
279	103	5,410	2,909	6,256	12,826						
28	584	124,169	20,391	34,527	219,247						
281	19	10,169	1,397	2,439	41,276						
283	105	10,828	2,593	3,860	23,750						
284	108	12,424	1,845	3,106	28,223						
285	101	24,892	4,212	8,000	39,054						
286	24	4,565	858	1,040	3,787						
287	36	15,728	1,919	3,038	8,657						
289	191	45,563	7,567	13,041	74,500						
29	138	211,780	16,421	29,413	244,389						
291	59	173,759	11,988	21,460	149,878						
295	3	920	275	263	1,407						
299	76	37,101	4,158	7,690	93,104						
30	53	23,402	4,686	6,216	26,996						
301	6	10,887	1,916	2,556	13,214						
306	47	12,515	2,770	3,660	13,782						
31	281	67,687	17,447	33,237	175,693						
311	55	39,120	10,014	13,730	98,717						
312	17	2,011	420	829	4,772						
314	94	20,448	3,490	14,148	49,923						
315	4	306	158	158	421						
316	38	1,768	1,488	1,973	7,118						
319	73	4,034	1,877	2,399	14,742						
32	746	278,462	60,140	86,576	247,267						
321	59	57,053	14,282	20,887	56,201						
322	79	17,596	8,001	10,527	32,877						
323	18	1,248	540	717	2,234						
324	28	93,094	8,338	15,879	59,278						
325	229	78,411	18,565	24,372	56,404						
326	24	6,112	3,284	4,216	7,164						
327	257	14,341	3,833	4,824	13,058						
329	52	10,607	3,297	5,151	20,051						

Detail may not add to total because of rounding.



## 1930 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	17,857	\$4,480,980	1,034,801	\$1,477,351	\$5,880,469						
20	4,655	357,813	75,870	106,844	635,086	33	586	\$1,089,442	137,759	\$235,402	\$1,119,927
201	217	27,725	8,473	14,362	122,810	331	163	822,830	84,160	146,040	797,062
202	452	46,480	6,804	11,407	58,350	332	191	65,840	18,120	27,987	65,294
203	82	37,367	5,925	5,557	34,430	333	41	42,561	6,855	11,335	59,185
204	525	16,277	2,355	3,354	32,264	334	23	91,323	16,707	29,476	129,464
205	2,112	72,281	28,865	40,488	158,792	336	124	15,323	4,075	6,276	24,085
206	3	22,811	2,284	3,947	72,843	339	44	51,565	7,842	14,288	44,837
207	237	47,532	11,203	12,737	88,823						
208	633	35,296	4,162	6,429	22,338	34	990	511,981	121,214	189,485	785,305
209	394	52,044	5,799	8,563	44,436	342	221	71,676	19,544	27,527	61,124
						343	67	25,796	5,618	8,435	26,133
21	479	29,931	27,227	21,104	93,201	344	346	210,851	46,691	76,980	365,776
211	3	3,127	68	109	900	345	22	32,724	6,443	9,257	26,332
212	431	20,840	25,745	19,858	85,688	346	60	15,650	5,411	6,694	22,610
213	32	2,544	376	509	5,049	347	48	734	372	600	1,096
214	13	3,420	1,038	628	1,564	348	110	49,268	9,445	14,076	82,673
						349	116	105,282	27,690	45,916	199,561
22	1,332	450,056	176,482	201,171	705,147						
221	102	36,141	8,588	12,548	44,488	35	878	242,919	56,116	95,422	247,043
222	270	60,847	37,760	38,634	190,318	351	12	11,921	2,224	3,503	10,085
223	120	55,285	14,007	16,950	68,956	352	16	3,348	920	1,306	3,888
224	44	6,927	3,274	3,663	10,007	353	72	16,311	3,905	6,749	18,323
225	364	108,134	54,062	64,208	180,978	354	96	11,980	2,404	3,852	9,307
226	111	25,104	6,672	10,439	30,541	355	361	162,748	39,764	68,480	176,054
227	56	31,966	6,742	9,858	29,694	356	26	13,658	2,500	4,193	10,749
228	200	68,674	34,450	30,120	103,294	357	10	7,567	1,103	1,284	4,151
229	65	56,978	10,927	15,751	46,871	358	3	5,211	562	1,482	4,212
						359	282	10,175	2,734	4,573	10,274
23	2,121	91,449	87,363	81,472	304,333						
231	835	21,268	22,669	25,075	86,276	36	188	261,431	50,103	88,875	272,616
232	378	23,999	29,331	20,365	85,600	363	3	3,729	679	852	2,831
233	367	10,680	18,110	16,661	63,690	364	38	4,694	1,860	2,907	6,822
234	8	1,099	726	729	3,216	365	29	16,678	4,661	11,069	52,837
235	103	13,118	6,579	9,088	22,780	369	118	236,330	42,903	74,047	210,126
237	121	2,392	767	1,192	3,444						
238	22	2,691	1,510	1,281	7,533	37	249	297,192	56,541	92,680	331,398
239	287	16,202	7,671	7,081	31,794	371	128	65,287	21,844	34,022	137,572
						372	5	3,130	1,664	3,092	3,327
24	875	64,158	17,151	22,311	60,304	373	15	15,086	5,138	7,909	21,980
242	592	44,036	9,007	13,428	32,383	374	63	211,875	27,382	46,925	167,161
243	44	1,780	583	808	3,709	379	38	1,814	513	732	1,358
244	78	4,999	2,746	2,755	8,633						
249	161	13,343	4,815	5,320	15,579	38	194	28,685	10,839	16,684	44,984
						381	42	9,361	3,233	6,051	13,112
25	437	33,495	13,167	17,342	47,910	382	11	-	2,172	-	-
251	417	33,195	12,982	17,080	46,804	383	37	3,048	828	1,431	3,575
259	20	300	185	262	1,106	384	102	5,527	3,377	4,181	11,536
						387	2	-	1,229	-	-
26	324	119,391	24,381	34,427	134,547						
261	3	4,258	493	956	7,019	39	535	44,025	15,663	20,808	63,866
263	9	7,493	984	1,507	6,447	391	80	2,575	831	1,508	3,226
264	173	94,714	16,804	25,336	101,760	393	22	5,020	515	754	1,687
265	139	12,926	6,100	6,628	19,321	394	34	4,870	2,547	2,514	7,278
						395	40	2,656	954	1,512	3,524
27	2,043	156,737	45,195	84,453	245,700	396	20	4,583	1,937	2,516	6,662
271	1,846	148,696	40,658	75,919	229,478	398-99	339	24,321	8,879	12,004	41,489
278	93	2,839	1,771	2,354	5,096						
279	104	5,202	2,766	6,180	11,126						
28	633	128,953	20,195	33,972	193,741						
281	20	11,103	852	1,568	31,780						
283	126	11,927	2,700	4,360	21,696						
284	121	14,208	1,988	3,348	26,233						
285	106	25,865	3,981	7,572	37,234						
286	24	4,341	736	705	2,244						
287	36	15,067	1,675	2,535	9,195						
289	200	46,442	8,263	13,884	65,359						
29	151	225,618	16,522	29,890	228,367						
291	68	183,645	12,102	22,114	144,696						
295	5	708	236	233	1,271						
299	78	41,265	4,184	7,543	82,400						
30	61	21,868	4,265	5,651	23,929						
301	5	8,422	1,671	2,202	10,001						
306	56	13,446	2,594	3,449	13,928						
31	287	65,671	25,693	30,465	147,665						
311	58	38,030	9,651	13,657	82,615						
312	17	1,559	306	486	2,711						
314	96	19,277	12,073	11,938	40,362						
315	3	203	155	146	355						
316	38	1,653	1,245	1,506	4,690						
319	75	4,949	2,263	2,732	16,932						
32	839	260,165	53,055	68,893	195,400						
321	60	52,913	11,534	14,102	35,029						
322	83	14,839	7,093	8,449	26,856						
323	20	1,080	462	689	1,674						
324	27	79,198	7,887	14,030	53,288						
325	230	78,172	16,419	18,909	42,923						
326	25	5,522	2,844	3,301	6,035						
327	334	16,237	3,811	4,964	12,973						
329	60	12,204	3,005	4,449	16,622						

Detail may not add to total because of rounding.

## 1931 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	16,991	\$4,262,046	904,025	\$1,117,743	\$4,065,013						
20	4,551	348,762	74,872	98,824	525,535	329	56	\$10,111	2,530	\$3,251	\$9,826
201	215	27,779	8,449	13,241	95,537						
202	442	43,350	6,951	10,572	47,039	33	612	1,164,816	129,509	184,091	780,896
203	81	36,306	5,646	4,885	28,402	331	218	992,197	93,270	134,692	607,545
204	518	15,550	2,251	2,942	22,830	332	184	48,811	12,881	15,427	35,619
205	2,027	71,337	28,189	36,851	136,473	333	33	37,169	4,498	6,546	33,957
206	3	23,320	2,131	3,658	63,268	334	16	40,015	10,900	16,958	64,041
207	238	44,158	11,061	12,060	74,658	336	120	13,556	3,255	4,365	13,272
208	632	34,605	4,220	6,443	20,566	339	41	33,068	4,705	6,103	26,462
209	395	52,357	5,974	8,172	36,762						
21	415	29,929	24,334	16,462	77,465	34	901	381,467	73,977	95,255	311,309
211	2	-	69	-	-	342	177	56,506	12,006	15,036	30,178
212	369	20,345	22,873	15,220	69,667	343	65	22,528	5,068	7,003	19,515
213	33	2,319	394	520	5,301	344	283	100,467	19,750	27,784	116,900
214	11	-	998	-	-	345	25	34,964	6,048	6,329	14,436
22	1,270	417,456	162,150	165,468	536,599	346	52	15,122	5,083	5,692	21,416
221	95	41,630	6,983	9,254	31,699	347	44	602	313	458	792
222	253	51,536	35,407	32,705	138,301	348	84	53,517	9,724	11,940	49,817
223	116	49,129	12,905	15,289	55,841	349	171	97,761	15,985	21,013	58,255
224	45	6,640	3,099	3,118	8,326	35	817	226,247	43,623	63,496	145,546
225	342	97,280	50,338	50,998	136,896	351	10	10,926	1,310	1,344	4,620
226	108	25,637	6,280	8,684	28,301	352	13	3,479	823	988	2,782
227	55	27,592	6,216	7,845	25,359	353	65	16,166	2,793	4,108	8,933
228	187	68,401	31,595	25,186	77,356	354	92	9,670	1,926	2,578	5,743
229	69	49,611	9,327	12,389	34,520	355	341	154,070	31,715	46,898	106,792
23	1,951	82,953	86,559	70,161	255,200	356	28	11,821	1,987	2,959	6,531
231	753	17,724	22,040	20,974	67,560	357	9	6,354	780	850	2,226
232	367	22,173	31,174	19,459	80,164	358	3	4,913	316	837	1,845
233	334	9,860	17,500	14,394	53,324	359	256	8,848	1,973	2,934	6,074
234	8	1,021	826	871	3,014	36	181	245,795	44,259	62,356	176,282
235	91	12,628	5,802	6,178	15,957	363	13	5,763	873	1,194	3,711
237	108	2,327	718	999	2,720	364	36	4,369	1,709	2,240	5,182
238	52	3,988	4,635	3,084	13,567	365	14	16,216	7,240	9,224	45,440
239	238	13,232	3,864	4,202	18,894	369	118	219,447	34,437	49,698	121,949
24	806	60,681	14,182	16,113	41,954	37	220	269,423	38,222	55,146	167,597
242	531	41,485	7,046	9,100	20,092	371	119	59,589	15,707	22,320	73,230
243	40	1,696	503	625	2,693	372	9	3,474	2,084	3,748	8,010
244	76	4,813	2,362	2,036	5,777	373	12	15,516	3,259	4,592	13,804
249	159	12,687	4,271	4,352	13,392	374	49	189,467	16,810	24,010	71,740
25	408	32,817	12,078	14,291	38,390	379	31	1,377	362	476	813
251	390	32,575	11,916	14,065	37,414	38	211	28,950	9,867	13,629	33,467
259	18	242	162	226	976	381	44	8,881	2,976	4,758	9,754
26	315	111,594	23,050	29,704	117,910	382	12	6,046	1,679	2,380	6,609
261	5	6,796	706	881	9,187	383	41	2,739	977	1,606	3,515
264	163	85,137	15,714	21,488	84,406	384	100	5,473	3,015	3,598	9,536
265	138	12,898	5,810	6,257	18,388	386	12	-	164	-	-
266	9	6,763	820	1,078	5,929	387	2	-	1,056	-	-
27	2,006	158,136	42,640	75,830	207,222	39	502	35,585	14,112	17,382	52,450
271	1,815	149,744	38,428	67,918	193,311	391	75	2,767	730	1,140	2,329
278	91	2,830	1,565	1,955	4,193	393	22	3,409	381	519	936
279	100	5,562	2,647	5,957	9,718	394	32	3,824	2,259	2,020	5,881
28	597	125,781	20,324	31,729	158,425	395	40	2,567	849	1,187	2,793
281	11	12,347	981	1,632	18,839	396	14	3,781	2,015	2,464	6,932
283	113	9,488	2,643	4,227	18,789	398-99	319	19,237	7,878	10,052	33,579
284	125	13,615	1,990	3,320	24,072						
285	100	21,602	3,800	6,691	25,668						
286	32	5,915	842	827	3,737						
287	34	20,707	1,468	1,732	5,373						
289	182	42,107	8,600	13,300	61,947						
29	143	224,114	16,279	28,343	177,242						
291	56	174,725	11,845	20,954	113,863						
295	5	570	178	137	468						
299	82	48,819	4,256	7,252	62,911						
30	56	19,108	3,859	4,907	18,180						
301	5	8,008	1,619	2,123	9,191						
306	51	11,100	2,240	2,784	8,989						
31	270	56,968	24,430	25,482	112,351						
311	53	31,193	8,930	11,339	59,920						
312	16	-	245	-	-						
314	90	17,694	12,018	10,261	33,862						
315	2	-	122	-	-						
316	37	1,248	823	1,053	3,445						
319	72	4,777	2,292	2,358	13,200						
32	759	241,464	43,699	49,074	130,894						
321	49	43,496	8,001	9,600	22,505						
322	78	17,550	7,145	7,986	28,821						
323	20	1,053	436	595	1,257						
324	26	74,824	6,832	10,293	31,263						
325	206	71,012	13,014	10,980	23,335						
326	25	5,420	2,424	2,715	5,027						
327	299	17,998	3,317	3,654	8,860						

Detail may not add to total because of rounding.

## 1932 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	16,077	\$3,980,365	777,992	\$765,949	\$2,686,432						
20	4,236	331,588	68,981	79,731	413,567	329	53	\$8,686	2,034	\$2,235	\$5,9
201	207	26,333	8,486	11,611	75,861						
202	431	37,289	4,908	6,631	33,291	33	595	1,050,655	91,013	95,746	364,2
203	78	36,271	5,803	4,294	23,557	331	194	919,971	68,875	74,263	300,7
204	473	14,246	2,050	2,404	16,472	332	168	59,233	11,219	9,445	18,3
205	1,894	66,750	26,078	29,915	107,814	333	31	30,600	4,536	5,196	19,7
206	3	23,763	1,989	3,140	53,150	334	11	3,521	747	927	4,8
207	219	42,098	10,517	10,228	59,446	336	114	14,609	2,974	2,914	9,1
208	546	31,849	3,862	4,984	14,192	339	77	22,721	2,662	3,001	11,3
209	385	52,989	5,288	6,524	29,784						
						34	830	347,578	58,593	56,033	177,1
21	376	26,818	22,035	12,046	55,369	342	172	50,905	9,903	9,989	18,7
211	310	16,894	20,090	10,725	47,703	343	65	21,188	4,025	4,197	11,5
212	26	3,562	638	432	1,609	344	274	90,999	14,713	15,641	63,6
213	31	2,658	421	486	5,059	345	28	33,527	4,544	3,489	7,4
214	9	3,704	886	403	998	346	52	14,565	4,728	3,752	16,9
						347	51	712	326	392	7
22	1,216	372,262	150,938	122,701	380,294	348	76	53,921	7,670	7,671	27,6
221	95	29,212	5,376	5,598	18,837	349	112	81,761	12,684	10,902	30,4
222	236	46,800	32,024	21,152	87,042						
223	104	44,079	10,934	10,036	35,626	35	766	225,436	33,739	39,250	76,8
224	46	6,855	2,611	2,289	5,624	351	10	10,389	1,059	799	1,8
225	323	90,282	50,383	42,810	109,734	352	10	3,219	627	642	1,4
226	112	21,936	6,017	6,978	17,482	353	58	15,316	2,180	2,437	4,9
227	50	22,312	5,056	5,370	16,333	354	88	9,119	1,403	1,633	4,1
228	174	66,419	29,948	19,849	60,266	355	310	158,512	24,590	29,557	55,3
229	76	44,367	8,589	8,619	29,350	356	24	9,632	1,286	1,566	3,4
						357	8	5,945	564	332	1,2
23	1,775	71,593	83,997	53,203	179,804	358	3	4,962	284	203	4
231	663	16,042	22,755	16,472	47,089	359	255	8,342	1,746	2,081	3,8
232	362	18,997	31,553	15,174	59,500						
233	303	8,736	16,370	10,686	38,668	36	164	216,851	34,627	37,160	102,6
234	8	1,039	750	577	2,278	363	4	3,956	617	625	1,6
235	84	11,851	5,472	4,820	11,191	364	30	4,437	1,705	1,613	4,3
237	85	1,805	491	619	1,246	365	15	12,887	6,216	6,188	23,0
238	43	3,648	3,404	1,903	7,484	369	115	195,571	26,089	28,734	73,5
239	227	9,475	3,202	2,952	12,348						
						37	215	261,327	30,401	34,682	96,6
24	757	52,701	11,887	10,950	27,543	371	119	54,695	12,792	14,036	43,2
242	481	35,048	5,346	5,536	11,718	372	6	2,431	799	796	2,1
243	37	1,560	465	476	1,954	373	13	17,162	2,611	3,622	8,6
244	73	4,403	2,079	1,542	4,137	374	52	186,432	14,005	16,032	42,1
249	166	11,690	3,997	3,396	9,734	379	25	607	194	196	4
25	402	29,901	10,310	9,523	24,459	38	255	26,463	8,380	9,684	21,2
251	383	29,670	10,162	9,360	23,645	381	42	8,368	2,347	3,059	5,8
259	19	231	148	163	814	382	10	4,135	1,123	1,339	3,4
						383	40	2,685	908	1,283	2,9
26	311	106,429	21,338	23,100	88,127	384	151	5,715	2,983	3,047	7,2
261	3	567	106	81	1,976	386	10	-	120	-	-
264	150	83,394	14,712	16,881	64,818	387	2	-	899	-	-
265	150	15,989	5,925	5,465	17,221						
266	8	6,479	595	673	4,112	39	495	64,772	17,543	18,567	50,7
						391	79	2,182	617	836	1,5
27	1,993	153,256	39,850	62,798	158,544	393	19	3,119	354	357	7
271	1,795	145,189	36,250	56,983	149,354	394	30	3,676	2,222	1,721	5,0
278	93	2,601	1,319	1,393	2,779	395	41	2,536	774	952	2,1
279	105	5,466	2,281	4,422	6,411	396	16	6,799	1,800	1,886	5,6
						398-99	310	46,460	11,776	12,815	35,6
28	601	131,675	16,736	22,896	115,388						
281	15	32,420	1,401	1,824	14,962						
283	104	10,316	3,416	4,780	23,033						
284	129	14,196	1,963	2,797	17,023						
285	106	19,751	3,240	4,770	19,517						
286	28	5,567	723	700	2,708						
287	32	11,346	920	907	4,141						
289	187	38,079	5,073	7,118	34,004						
29	137	212,118	15,412	24,488	176,295						
291	56	174,865	11,828	19,069	121,122						
295	6	600	140	99	358						
299	75	36,653	3,444	5,320	54,815						
30	44	17,168	3,604	4,006	16,180						
301	4	5,175	1,688	2,072	9,620						
306	40	11,993	1,916	1,934	6,560						
31	267	64,477	23,350	19,507	78,651						
311	48	38,209	7,916	8,276	40,150						
312	15	-	257	-	-						
314	90	18,726	12,164	8,368	25,618						
315	2	-	100	-	-						
316	32	941	688	593	2,151						
319	80	4,620	2,225	1,866	9,482						
32	642	217,297	35,258	29,878	82,720						
321	41	40,236	6,294	5,743	17,335						
322	72	18,542	6,598	6,080	21,161						
323	21	983	379	391	861						
324	24	68,951	5,713	6,124	16,140						
325	171	59,371	9,278	4,936	10,964						
326	25	5,885	2,466	2,123	4,186						
327	235	14,643	2,496	2,246	6,142						

Detail may not add to total because of rounding.



## 1933 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	16,257	\$3,728,205	855,693	\$796,801	\$3,016,611						
20	4,220	314,993	74,685	75,302	406,530	329	55	\$11,188	3,136	\$1,213	\$7,224
201	212	25,105	9,294	10,964	72,129						
202	447	35,889	5,157	6,167	30,497	33	626	1,030,156	120,713	125,790	576,539
203	86	37,168	6,095	4,021	23,545	331	214	899,307	96,682	103,513	485,387
204	486	15,081	2,217	2,415	19,636	332	165	54,541	11,232	9,292	22,067
205	1,906	65,962	28,271	29,825	106,816	333	38	35,327	5,202	5,429	30,063
206	3	28,944	2,361	3,005	53,512	334	13	4,726	1,033	1,193	7,917
207	208	37,273	10,838	9,225	54,423	336	118	13,689	3,453	3,344	12,767
208	477	11,969	2,716	3,104	9,183	339	78	22,566	3,111	3,019	18,318
209	395	57,602	7,736	6,576	36,789						
						34	855	307,085	64,358	58,163	210,065
21	358	24,858	21,641	12,063	54,776	342	173	46,171	10,415	10,221	22,047
211	298	15,856	20,040	10,970	48,684	343	68	20,762	4,534	4,167	11,644
212	23	3,520	503	315	1,859	344	283	77,956	17,717	16,071	70,370
213	29	2,577	449	470	3,824	345	27	33,145	5,177	4,416	11,458
214	8	2,905	649	308	409	346	50	11,497	4,244	3,613	17,933
						347	61	780	372	393	740
22	1,177	345,681	165,155	128,870	409,149	348	76	42,877	9,175	7,644	35,531
221	31	24,691	6,484	6,330	23,630	349	117	73,897	12,724	11,638	40,342
222	251	41,007	33,809	22,112	83,645						
223	108	42,227	13,720	12,345	47,244	35	790	178,168	31,012	34,344	80,160
224	44	6,197	2,586	2,275	6,295	351	7	-	1,070	-	-
225	329	86,175	52,352	41,225	106,300	352	13	3,540	679	808	2,019
226	118	19,976	6,410	6,922	20,713	353	60	14,890	2,248	2,461	6,274
227	48	24,754	5,980	5,708	18,460	354	101	7,647	1,733	1,894	5,448
228	172	59,556	34,679	22,976	67,297	355	309	115,794	21,447	24,347	54,591
229	76	41,098	9,135	8,977	35,565	356	28	12,160	1,495	1,649	4,200
						357	9	6,322	529	209	904
23	1,859	73,013	96,735	64,638	223,020	358	2	-	53	-	-
231	707	16,448	25,811	20,902	63,888	359	261	8,433	1,758	1,915	4,002
232	372	19,893	38,634	20,169	79,818						
233	322	8,474	17,446	11,374	38,785	36	168	211,620	35,819	37,853	101,647
234	11	1,049	850	667	2,160	363	4	3,864	564	537	1,549
235	86	11,719	5,869	5,255	12,290	364	30	4,184	1,633	1,444	4,077
237	100	1,676	689	723	1,625	365	10	17,673	9,124	8,628	28,903
238	39	4,802	3,872	2,440	10,067	369	124	185,899	24,498	27,244	67,118
239	222	8,952	3,564	3,108	14,387						
						37	206	257,278	31,692	32,208	96,416
24	731	48,085	12,237	10,309	29,070	371	114	54,483	14,289	14,581	57,606
242	460	29,877	4,686	4,194	8,671	372	6	2,056	355	414	979
243	40	1,758	701	710	3,762	373	13	17,398	2,546	3,119	5,420
244	69	4,993	2,283	1,608	4,163	374	54	182,804	14,354	13,971	32,132
249	162	11,457	4,567	3,797	12,474	379	19	537	148	123	279
25	424	26,707	11,167	9,194	26,886	38	277	24,886	8,475	9,488	22,181
251	406	26,524	10,987	9,001	25,905	381	49	7,861	2,449	3,207	6,170
259	18	183	180	193	981	382	10	3,106	1,041	1,107	3,277
						383	49	2,877	1,205	1,513	3,629
26	320	102,161	24,388	24,892	99,476	384	155	5,532	2,838	2,783	7,359
261	2	-	96	-	-	386	10	445	93	119	340
263	152	82,643	16,905	18,230	72,644	387	4	5,065	849	759	1,406
264	158	15,727	6,695	5,946	21,966						
265	8	-	692	-	-	39	506	34,948	14,452	13,756	42,520
						391	74	1,818	537	617	1,263
27	2,050	152,507	39,735	55,795	142,743	393	21	3,239	390	369	763
271	1,848	144,719	36,212	50,843	134,486	394	44	4,226	2,858	2,058	5,284
278	95	2,573	1,314	1,300	2,669	395	39	2,452	868	942	2,367
279	107	5,215	2,209	3,652	5,588	396	17	7,395	2,256	2,399	7,948
						398-99	311	15,818	7,543	7,371	24,895
28	612	123,173	18,585	23,131	128,826						
281	19	29,951	1,846	2,445	21,005						
283	107	10,449	3,569	4,508	26,616						
284	128	14,005	1,958	2,609	14,376						
285	108	22,051	3,584	4,648	20,379						
286	29	5,122	806	768	3,786						
287	29	6,534	852	804	3,950						
289	192	35,061	5,970	7,349	38,714						
29	141	201,895	17,108	25,081	169,859						
291	50	165,633	12,813	19,365	115,019						
295	10	690	142	78	339						
299	81	35,572	4,153	5,638	54,501						
30	49	10,550	4,143	4,224	15,927						
301	4	5,145	2,022	2,180	8,263						
306	45	5,405	2,121	2,044	7,664						
31	257	47,981	23,649	19,870	85,604						
311	45	27,113	8,661	8,729	44,244						
312	17	1,206	183	229	1,134						
314	89	14,092	11,145	8,009	24,146						
315	3	198	113	81	166						
316	27	707	949	696	2,296						
319	76	4,665	2,598	2,126	13,618						
32	631	212,460	39,944	31,830	95,217						
321	43	38,532	7,708	6,503	24,347						
322	66	17,630	7,652	6,712	22,609						
323	20	735	350	309	809						
324	25	67,299	5,769	5,292	14,828						
325	166	57,674	10,296	5,925	15,865						
326	24	6,041	2,626	1,964	4,075						
327	232	13,361	2,407	1,892	5,460						

Detail may not add to total because of rounding.

## 1934 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	16,050	\$3,583,650	932,046	\$987,193	\$3,663,884						
20	4,194	334,585	86,636	96,663	592,284	329	50	\$11,334	3,837	\$4,043	\$11,205
201	211	23,416	9,489	12,313	89,333						
202	437	34,720	5,542	6,626	33,765	33	607	1,027,243	144,582	170,821	674,422
203	88	23,979	8,011	5,219	31,054	331	208	902,567	117,313	140,282	551,425
204	469	14,761	2,222	2,500	24,912	332	157	51,140	12,766	12,997	31,199
205	1,811	65,404	29,386	33,377	122,463	333	38	35,778	5,620	6,959	34,368
206	3	27,480	2,641	3,382	57,196	334	13	4,699	1,218	1,699	10,379
207	197	36,965	11,532	10,474	65,099	336	115	12,117	3,898	4,695	15,507
208	582	54,512	8,889	13,442	74,263	339	76	20,942	3,767	4,189	31,544
209	396	53,348	8,924	9,330	94,199						
21	340	23,562	22,707	14,576	64,167	34	843	283,619	67,877	72,992	264,934
211	280	14,551	20,765	13,224	54,153	342	174	44,771	11,973	13,082	27,625
212	21	3,469	590	399	5,339	343	63	17,665	4,943	5,167	14,184
213	32	2,871	590	569	4,125	344	275	83,531	19,411	21,888	91,083
214	7	2,671	762	384	550	345	25	29,205	5,271	5,429	14,482
22	1,188	336,130	163,805	148,171	414,723	346	49	11,237	4,600	4,377	21,529
221	87	24,124	6,586	6,845	26,448	347	63	630	382	452	982
222	243	43,193	34,155	26,060	79,458	348	76	24,744	5,540	5,732	33,206
223	110	41,848	13,219	12,740	44,170	349	118	71,836	15,757	16,865	61,843
224	43	5,642	2,476	2,412	7,296	35	782	165,988	35,602	45,423	106,769
225	316	80,703	53,370	53,070	120,945	351	7	9,046	1,054	1,182	3,706
226	113	20,679	7,098	7,991	24,628	352	13	3,760	992	1,163	3,175
227	46	19,212	5,718	6,149	18,774	353	61	11,999	2,496	3,233	8,075
228	154	59,954	31,814	22,622	55,259	354	100	10,247	2,402	3,233	8,219
229	76	40,775	9,369	10,282	37,745	355	301	112,113	25,051	32,315	73,047
23	1,850	68,078	102,365	76,105	247,019	356	27	9,864	1,495	1,749	4,603
231	699	12,839	28,588	23,971	67,758	357	7	-	108	-	-
232	351	19,448	38,794	23,362	84,554	358	2	-	59	-	-
233	336	8,228	19,135	14,180	45,590	359	264	8,144	1,945	2,339	5,530
234	11	1,043	781	717	2,364	36	168	125,725	40,954	50,858	144,910
235	84	11,190	5,905	5,990	14,845	363	4	3,892	608	637	1,835
237	105	1,688	595	760	1,871	364	28	4,039	1,732	1,682	4,127
238	43	5,052	4,372	3,447	12,352	365	11	16,490	11,059	11,883	38,229
239	221	8,590	4,195	3,678	17,685	369	125	101,304	27,555	36,656	100,719
24	707	45,993	12,339	11,124	31,983	37	210	242,931	36,429	44,837	139,143
242	445	28,317	4,686	4,360	9,756	371	113	51,823	16,640	19,426	68,028
243	40	1,941	669	744	3,722	372	7	3,179	357	382	1,822
244	66	4,357	2,061	1,637	4,401	373	16	18,274	2,809	3,742	6,393
249	156	11,378	4,923	4,383	14,104	374	52	169,004	16,433	21,110	62,525
25	409	23,694	11,191	10,237	28,646	379	22	651	190	177	375
251	390	23,322	10,906	9,894	27,251	38	278	25,559	9,442	11,891	29,284
259	19	372	285	343	1,395	381	51	8,021	2,769	3,944	8,046
26	325	102,829	26,021	29,157	114,815	382	10	3,165	1,125	1,334	4,011
261	2	-	107	-	-	383	56	3,082	1,444	1,974	4,839
264	158	83,112	18,019	21,095	80,647	384	150	5,648	2,869	3,202	9,265
265	157	15,232	6,981	6,956	27,078	386	8	577	82	138	479
266	8	-	914	-	-	387	3	5,066	1,153	1,299	2,644
27	2,011	140,775	39,954	60,473	159,709	39	488	34,190	16,179	16,075	46,842
271	1,809	132,993	36,230	54,980	150,175	391	75	1,505	530	679	1,631
278	97	2,487	1,458	1,550	3,186	393	19	3,109	451	485	1,086
279	105	5,295	2,266	3,943	6,348	394	41	4,325	2,983	2,318	6,109
28	606	124,265	20,466	26,783	154,846	395	35	2,342	893	895	2,665
281	19	26,317	2,301	3,141	35,077	396	16	7,906	3,796	3,894	10,444
283	106	10,643	3,679	4,684	25,287	398-99	302	15,003	7,526	7,804	24,907
284	123	14,183	1,822	2,674	15,691						
285	111	22,844	3,916	5,345	24,857						
286	29	4,674	879	782	3,303						
287	27	4,430	852	888	3,692						
289	191	41,174	7,017	9,269	46,939						
29	141	217,624	19,865	31,521	212,114						
291	49	173,559	14,064	23,108	140,255						
295	12	736	164	115	1,079						
299	80	43,329	5,637	8,298	70,780						
30	47	11,505	4,741	4,896	19,425						
301	4	5,866	2,229	2,345	9,854						
306	43	5,639	2,512	2,551	9,571						
31	248	47,104	25,273	23,653	96,631						
311	46	26,399	9,390	10,469	50,912						
312	19	1,309	345	419	1,376						
314	85	14,234	12,098	9,667	28,363						
315	3	198	125	104	216						
316	26	679	646	532	1,917						
319	69	4,285	2,669	2,462	13,847						
32	608	202,251	45,618	40,937	121,218						
321	46	35,415	10,272	9,492	32,672						
322	66	18,053	9,380	8,778	26,854						
323	19	728	409	380	905						
324	25	65,084	6,254	6,560	21,004						
325	166	54,938	10,471	7,460	18,653						
326	23	4,496	2,476	2,011	4,299						
327	213	12,203	2,519	2,213	5,626						

Detail may not add to total because of rounding.

## 1935 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	16,000	\$3,493,596	974,562	\$1,101,093	\$4,227,480						
20	4,217	332,147	86,824	99,184	617,038	329	51	\$9,059	4,057	\$5,117	\$14,679
201	217	22,252	8,955	11,908	110,752						
202	473	33,760	6,054	7,149	37,443	33	611	1,005,206	148,950	194,919	866,555
203	105	26,051	9,475	5,774	39,718	331	202	883,962	120,284	160,901	724,851
204	489	15,686	2,305	2,599	26,540	332	161	47,915	12,461	13,460	32,019
205	1,759	65,706	29,698	34,772	128,588	333	36	36,174	5,759	7,590	36,728
206	3	27,490	2,477	3,254	56,369	334	12	4,611	1,189	1,736	13,280
207	191	36,427	11,607	11,007	72,802	336	123	15,066	5,071	5,935	21,037
208	581	63,797	10,841	16,132	104,942	339	77	17,478	4,186	5,297	38,640
209	399	40,978	5,412	6,589	39,884						
21	320	23,602	21,314	13,690	67,445	34	824	287,588	78,029	89,845	319,819
211	261	13,363	19,198	12,142	52,767	342	178	41,561	13,250	15,743	37,864
212	20	3,484	661	538	9,414	343	61	19,285	5,258	6,197	17,633
213	30	2,699	539	550	4,250	344	268	79,081	20,603	24,214	103,701
214	9	4,056	916	460	1,014	345	25	28,803	5,389	6,095	15,984
22	1,139	320,023	173,330	167,628	495,474	346	49	12,409	5,998	5,681	25,342
221	78	21,258	6,498	7,189	33,899	347	57	764	526	606	1,328
222	227	38,773	31,666	24,836	79,116	348	74	40,470	10,621	12,052	46,682
223	106	42,320	16,510	17,101	67,453	349	112	65,215	16,384	19,257	71,285
224	41	5,604	2,814	2,792	8,432	35	797	161,411	40,328	54,522	137,173
225	316	79,680	59,905	62,120	141,217	351	7	9,030	1,408	1,579	4,418
226	112	22,657	6,817	8,451	20,611	352	14	3,437	1,129	1,347	3,867
227	45	17,982	5,978	7,085	25,290	353	62	12,491	2,869	3,756	10,451
228	137	58,127	32,497	25,371	67,617	354	105	11,046	3,216	4,706	9,985
229	77	33,622	10,645	12,683	51,839	355	307	107,528	27,807	38,170	95,229
23	1,812	68,063	107,409	83,833	275,205	356	29	9,175	1,654	2,121	6,245
231	669	14,062	30,376	27,861	78,420	357	6	-	111	-	-
232	339	18,913	40,028	25,127	90,804	358	1	-	37	-	-
233	339	7,866	20,626	15,410	51,840	359	266	8,278	2,097	2,674	6,486
234	11	991	724	637	2,454	36	162	121,768	44,576	59,692	187,615
235	74	11,508	6,314	6,689	16,969	363	4	3,119	601	656	2,397
237	103	1,581	658	830	2,212	364	26	3,619	1,809	1,888	5,688
238	45	4,945	4,693	3,680	12,921	365	9	16,023	12,393	13,934	53,660
239	232	8,197	3,990	3,599	19,585	369	123	99,007	29,773	43,214	125,870
24	739	40,606	12,816	12,200	36,640	37	204	224,608	36,398	46,934	149,794
242	481	24,704	5,009	4,874	12,095	371	108	46,880	17,089	21,618	87,685
243	39	1,866	620	729	3,523	372	7	1,984	443	552	2,126
244	65	4,100	2,085	1,689	4,638	373	15	18,279	2,631	3,682	4,542
249	154	9,936	5,102	4,908	16,384	374	51	156,843	16,023	20,876	54,967
25	409	22,593	11,583	11,501	34,173	379	23	622	212	206	474
251	390	22,409	11,400	11,289	33,135	38	276	24,498	10,522	13,710	35,377
259	19	184	183	212	1,038	381	50	8,566	3,357	4,828	10,564
26	326	102,108	26,903	31,468	127,107	382	8	2,726	1,274	1,714	5,581
261	2	-	113	-	-	383	56	3,000	1,450	1,994	5,038
264	159	83,877	18,549	22,970	90,431	384	152	5,167	2,866	3,199	9,505
265	158	14,922	7,349	7,534	30,536	386	7	593	99	193	530
266	7	-	892	-	-	387	3	4,446	1,476	1,782	4,159
27	2,011	140,078	40,651	63,888	166,861	39	495	35,203	17,245	19,108	56,177
271	1,816	133,517	37,002	57,962	156,803	391	75	1,389	523	727	1,603
278	93	2,243	1,508	1,676	3,468	393	16	2,513	461	535	1,228
279	102	4,318	2,141	4,250	6,590	394	42	3,974	3,123	2,604	7,065
28	595	115,683	20,663	28,132	164,447	395	36	2,384	966	1,180	3,074
281	20	19,863	2,314	3,460	26,919	396	17	9,596	4,557	5,804	13,247
283	107	10,254	3,755	4,919	25,991	398-99	309	15,347	7,615	8,258	29,960
284	116	14,628	1,805	2,662	17,681						
285	110	22,520	4,042	5,665	28,973						
286	28	4,042	900	852	4,258						
287	28	4,584	897	969	4,517						
289	186	39,792	6,950	9,605	56,108						
29	143	226,348	18,908	31,047	216,563						
291	51	188,047	13,444	23,051	146,151						
295	13	762	192	134	3,136						
299	79	37,539	5,272	7,862	67,276						
30	47	10,806	4,527	4,872	19,056						
301	4	5,886	1,974	2,149	9,226						
306	43	4,920	2,553	2,723	9,830						
31	251	42,666	26,834	25,924	111,653						
311	46	25,727	9,755	11,214	58,975						
312	17	1,214	180	285	1,836						
314	88	11,133	13,211	10,790	30,670						
315	3	197	132	111	249						
316	24	701	811	777	2,929						
319	73	3,694	2,745	2,747	16,994						
32	622	188,591	46,752	48,996	143,308						
321	46	35,664	9,937	11,469	38,764						
322	62	18,113	9,367	9,668	30,982						
323	20	769	542	514	1,271						
324	25	54,843	6,402	7,342	21,146						
325	161	52,740	11,262	9,147	23,805						
326	24	5,156	2,624	3,339	6,365						
327	233	12,247	2,561	2,400	6,296						

Detail may not add to total because of rounding.



## 1936 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	15,912	\$3,376,295	1,068,224	\$1,305,592	\$5,421,065						
20	4,158	321,827	90,786	108,954	730,598	329	56	\$9,896	4,907	\$6,358	\$23,601
201	208	21,573	8,958	12,139	118,950						
202	464	30,529	6,024	7,548	46,633	33	623	1,027,981	183,374	268,990	1,349,294
203	100	25,279	9,375	6,335	38,973	331	208	915,956	147,693	221,934	1,149,260
204	494	15,628	2,536	2,927	29,252	332	160	50,268	16,830	21,245	53,530
205	1,713	63,346	30,657	37,255	139,746	333	35	24,018	6,474	9,343	47,764
206	3	27,627	2,488	3,394	59,529	334	13	4,817	1,389	2,236	16,757
207	207	27,373	11,367	11,253	79,311	336	125	13,632	5,245	6,755	26,874
208	570	71,013	13,698	21,004	167,991	339	82	19,290	5,743	7,477	55,109
209	399	39,459	5,683	7,099	50,213						
						34	821	285,010	91,144	117,985	462,177
21	303	22,695	21,453	14,879	76,640	342	175	41,243	14,822	19,415	46,491
211	251	13,285	19,542	13,138	57,118	343	58	16,926	5,670	7,023	22,062
212	16	3,471	710	649	13,626	344	267	88,370	25,861	33,926	160,707
213	27	2,485	510	570	4,757	345	24	26,636	6,294	8,122	24,626
214	9	3,454	691	522	1,139	346	52	12,481	6,399	6,868	32,961
						347	58	897	741	843	2,226
22	1,084	301,452	169,610	168,769	532,053	348	73	32,656	12,387	16,607	66,802
221	72	20,844	6,762	7,941	38,032	349	114	65,801	18,970	25,181	106,302
222	197	31,344	28,565	22,128	79,212						
223	104	41,120	16,257	18,227	79,762	35	792	158,226	45,621	67,150	184,778
224	36	5,471	3,028	3,046	9,094	351	7	6,392	2,023	2,745	7,858
225	313	75,669	57,335	59,949	133,678	352	15	3,396	1,185	1,523	5,926
226	113	18,710	8,429	10,661	33,087	353	61	11,524	3,183	4,705	17,109
227	44	17,618	6,473	7,751	32,824	354	107	8,346	3,325	4,926	14,439
228	130	54,583	30,722	24,580	67,423	355	319	110,609	31,420	47,171	122,662
229	75	36,093	12,039	14,486	58,941	356	30	9,710	2,095	2,886	8,799
						357	6	-	124	-	-
23	1,812	69,695	116,032	91,238	323,735	358	1	-	32	-	-
231	653	14,196	30,358	28,007	85,572	359	246	7,812	2,234	3,006	7,457
232	324	19,315	40,199	26,451	104,048						
233	366	8,523	26,753	19,266	69,934	36	165	116,826	50,934	75,647	238,798
234	12	964	681	662	2,336	363	3	1,567	645	830	2,652
235	70	11,912	6,902	7,540	21,140	364	26	3,652	2,124	2,436	7,548
237	102	1,594	761	978	2,636	365	8	9,105	13,846	16,153	57,711
238	49	5,327	5,899	4,153	14,468	369	128	102,502	34,319	56,228	170,887
239	236	7,864	4,479	4,181	23,601						
						37	203	202,975	46,573	66,403	233,592
24	746	40,179	14,212	14,537	44,435	371	104	52,084	19,084	26,789	100,603
242	475	24,258	5,470	5,809	15,007	372	7	1,934	591	754	2,724
243	40	1,754	718	900	4,540	373	19	19,176	5,275	8,582	17,167
244	62	3,845	2,108	1,889	5,116	374	52	129,104	21,356	29,996	112,402
249	169	10,322	5,916	5,939	19,772	379	21	677	267	282	696
25	411	22,451	14,082	14,482	45,700	38	285	25,720	12,314	16,643	44,571
251	389	22,140	13,607	14,004	43,692	381	49	9,170	4,129	6,020	14,796
259	22	311	475	478	2,008	382	9	3,278	1,673	2,339	7,566
						383	61	3,073	1,497	2,101	5,484
26	327	100,717	28,201	35,264	140,405	384	154	5,336	3,176	3,746	10,422
261	2	-	147	-	-	386	9	420	220	394	757
263	160	81,689	19,220	26,060	99,182	387	3	4,443	1,619	2,043	5,546
264	158	15,701	7,915	8,311	34,493						
265	7	-	919	-	-	39	498	36,191	17,835	20,109	63,728
						391	73	1,386	536	734	1,744
27	1,992	143,040	42,703	68,280	180,337	393	15	2,376	387	483	1,091
271	1,790	136,164	38,816	61,771	169,172	394	41	3,549	3,377	3,126	8,059
278	94	2,268	1,603	1,828	3,774	395	35	2,372	970	1,270	3,265
279	108	4,608	2,284	4,681	7,391	396	20	11,683	4,506	5,292	14,757
						398-99	314	14,825	8,059	9,204	34,812
28	611	118,499	22,423	32,764	191,339						
281	20	22,099	2,442	3,822	35,517						
283	106	9,906	3,803	5,215	29,153						
284	128	14,894	1,753	2,754	20,167						
285	104	21,916	4,432	6,832	32,749						
286	27	3,792	901	909	4,627						
287	30	4,808	984	1,276	5,175						
289	196	41,084	8,108	11,956	63,951						
29	148	158,225	18,941	32,529	248,222						
291	47	116,698	12,829	22,848	165,853						
295	17	1,082	216	176	1,544						
299	84	40,445	5,896	9,505	80,825						
30	55	10,789	4,915	6,007	24,303						
301	4	5,886	2,021	2,636	11,464						
306	51	4,903	2,894	3,371	12,839						
31	251	39,673	26,634	26,756	122,795						
311	45	25,174	9,436	11,219	62,504						
312	16	1,116	193	312	2,356						
314	86	8,218	12,801	10,952	33,204						
315	3	197	139	118	306						
316	26	755	926	992	4,078						
319	75	4,213	3,139	3,163	20,347						
32	627	174,124	50,437	58,206	183,565						
321	40	32,269	10,133	11,963	44,129						
322	61	18,104	9,205	10,415	32,938						
323	21	764	763	612	1,720						
324	24	50,304	6,567	8,778	30,507						
325	160	45,825	13,122	13,599	35,510						
326	26	4,553	2,783	3,343	6,542						
327	239	12,409	2,957	3,138	8,618						

Detail may not add to total because of rounding.

## 1937 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	15,899	\$3,448,060	1,151,213	\$1,548,153	\$6,251,779						
20	4,155	317,287	93,699	117,593	780,256	329	53	\$10,862	5,637	\$8,007	\$23,178
201	207	19,488	9,393	13,624	129,221						
202	464	30,367	5,944	7,875	50,690	33	623	994,967	194,331	336,134	1,677,025
203	104	27,098	9,927	6,847	45,553	331	196	874,808	152,394	271,991	1,399,293
204	484	15,084	2,604	2,995	30,933	332	164	52,655	20,012	29,523	74,641
205	1,725	61,116	31,957	40,780	150,138	333	34	26,024	6,994	11,331	61,116
206	6	27,524	2,357	3,499	61,214	334	14	4,997	1,822	3,174	24,717
207	197	28,372	11,808	12,515	82,872	336	119	15,661	6,387	9,753	43,042
208	573	72,115	13,713	22,303	174,582	339	96	20,822	6,722	10,362	71,216
209	395	36,123	5,996	7,155	55,053						
21	269	21,807	21,325	15,568	85,514	34	837	285,830	102,495	149,680	554,740
211	218	12,605	19,220	13,537	59,293	342	184	43,536	17,553	24,666	56,468
212	16	3,467	724	752	18,790	343	57	15,540	5,832	7,158	23,579
213	25	2,447	597	669	6,300	344	270	85,162	28,464	44,546	203,428
214	10	3,288	784	610	1,131	345	24	26,407	7,565	10,820	29,169
22	1,076	298,751	170,105	171,990	527,428	346	53	21,222	7,929	9,556	34,824
221	75	20,767	7,821	9,197	34,047	347	57	917	822	970	2,733
222	177	29,251	26,676	21,158	77,090	348	76	27,352	12,442	18,555	67,531
223	105	39,372	16,709	18,444	78,879	349	116	65,694	21,888	33,409	137,008
224	38	6,411	3,346	3,524	11,032	35	791	164,078	54,430	88,596	238,287
225	319	72,879	57,509	60,375	144,553	351	8	7,216	2,409	3,522	8,940
226	121	19,904	8,891	10,444	24,951	352	15	3,483	1,313	1,897	5,624
227	38	14,797	5,920	6,845	30,452	353	60	10,400	3,731	6,116	23,475
228	129	57,907	30,680	26,346	64,156	354	109	9,665	4,028	6,557	15,623
229	74	37,463	12,553	15,657	62,268	355	319	114,037	37,185	62,340	158,775
23	1,820	69,946	120,732	91,931	317,483	356	31	10,624	2,727	4,082	11,386
231	650	14,166	32,407	29,577	89,017	357	7	-	396	-	-
232	325	18,629	40,393	24,041	91,638	358	1	-	41	-	-
233	376	9,048	28,436	19,950	71,444	359	241	7,911	2,600	3,630	9,324
234	12	974	705	717	2,423	36	173	117,427	58,381	97,204	298,825
235	66	11,878	6,991	7,668	21,286	363	7	1,989	1,124	1,494	3,941
237	105	1,780	854	1,108	2,741	364	29	3,458	2,362	2,941	8,507
238	49	5,498	6,051	4,154	12,955	365	8	4,220	10,503	12,236	49,931
239	237	7,973	4,895	4,716	25,979	369	129	107,760	44,392	80,533	236,446
24	732	39,375	15,370	17,066	50,409	37	201	303,240	65,717	107,437	320,138
242	472	23,195	5,930	7,074	18,403	371	105	47,080	21,072	31,670	123,638
243	35	1,791	675	853	4,135	372	8	4,217	1,261	1,821	3,829
244	59	3,739	2,149	1,999	5,683	373	22	20,339	5,841	10,270	27,750
249	166	10,650	6,616	7,140	22,188	374	49	231,072	37,371	63,492	164,508
25	431	22,156	15,373	16,883	52,004	379	17	532	172	184	413
251	410	21,890	14,936	16,390	49,821	38	293	27,355	14,041	20,538	53,883
259	21	266	437	493	2,183	381	50	9,369	4,555	7,773	18,133
26	328	104,017	29,406	39,148	159,406	382	11	3,828	2,194	3,250	10,135
261	2	-	194	-	-	383	67	3,774	1,711	2,335	5,986
264	160	83,097	20,045	28,969	112,839	384	155	5,507	3,317	3,958	11,314
265	159	17,302	8,322	9,003	39,721	386	7	433	238	436	837
266	7	-	845	-	-	387	3	4,444	2,026	2,786	7,478
27	1,959	140,839	44,867	74,915	191,031	39	514	36,180	19,851	22,938	73,259
271	1,760	134,002	40,628	67,638	179,008	391	74	1,135	528	782	1,795
278	92	2,300	1,793	2,021	3,890	393	17	2,424	444	562	1,343
279	107	4,537	2,446	5,256	8,133	394	44	3,179	3,224	2,956	8,441
28	603	125,450	24,934	38,593	211,629	395	35	2,375	1,001	1,449	3,456
281	18	18,515	2,606	4,370	41,229	396	16	11,610	4,714	6,057	17,883
283	111	10,486	4,143	5,843	31,486	398-99	328	15,457	9,940	11,132	40,341
284	116	14,121	1,805	2,895	21,027						
285	107	23,795	4,688	7,875	35,908						
286	27	3,994	1,054	1,003	5,224						
287	29	5,059	1,134	1,510	6,137						
289	195	49,480	9,504	15,097	70,618						
29	152	151,600	18,109	34,545	284,485						
291	47	106,601	11,788	24,109	186,739						
295	21	1,252	226	200	2,123						
299	84	43,747	6,095	10,236	95,623						
30	56	13,028	5,415	7,157	31,261						
301	5	7,561	2,346	3,389	17,352						
306	51	5,467	3,069	3,768	13,909						
31	256	38,784	28,748	28,870	138,485						
311	46	23,853	9,435	11,907	70,089						
312	15	1,134	198	344	1,880						
314	88	8,243	14,134	11,661	37,481						
315	3	192	144	129	298						
316	28	850	1,199	1,292	4,669						
319	76	4,512	3,638	3,537	24,068						
32	630	175,943	53,884	71,367	206,231						
321	38	33,077	11,131	15,353	53,632						
322	57	19,301	9,029	11,240	39,324						
323	22	756	694	647	1,710						
324	24	46,966	6,781	10,767	29,382						
325	161	45,537	13,981	17,102	40,841						
326	27	4,521	2,999	4,116	7,489						
327	248	14,923	3,632	4,135	10,675						

Detail may not add to total because of rounding.

## 1938 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	15,439	\$3,433,274	989,049	\$1,199,628	\$4,371,331						
20	4,072	321,409	92,418	116,761	691,810	329	51	\$10,507	4,362	\$5,625	\$15,126
201	197	19,022	9,335	13,540	116,058						
202	480	30,914	6,083	8,320	45,585	33	615	1,101,672	148,053	202,663	816,756
203	98	27,345	10,426	6,660	39,764	331	183	967,588	113,913	157,875	659,703
204	480	14,508	2,622	2,961	24,101	332	162	53,577	15,027	17,861	38,941
205	1,673	60,334	31,343	39,847	140,586	333	37	32,687	6,753	10,177	41,471
206	3	27,541	2,233	3,368	50,541	334	14	4,529	1,355	1,826	7,308
207	193	28,540	11,773	12,842	79,025	336	116	14,764	5,141	6,903	26,426
208	553	74,620	12,757	22,076	150,599	339	103	28,527	5,864	8,021	42,907
209	395	38,585	5,846	7,147	45,551						
						34	830	277,383	83,886	110,254	372,842
21	244	20,450	20,237	14,403	86,320	342	182	42,910	14,199	17,987	38,346
211	194	11,656	18,108	12,344	55,456	343	58	13,797	4,765	5,619	16,997
212	16	3,460	725	774	23,695	344	267	84,231	22,888	33,735	136,096
213	24	2,097	553	646	5,911	345	23	24,970	5,873	6,964	13,554
214	10	3,237	851	639	1,258	346	53	21,178	7,023	8,378	30,593
						347	56	923	667	788	2,033
22	982	279,195	146,269	148,667	402,966	348	76	26,627	10,779	13,946	52,790
221	67	20,334	5,914	7,027	22,677	349	115	62,747	17,692	22,837	82,433
222	149	19,236	21,239	15,511	57,598						
223	104	36,805	14,666	14,423	58,021	35	846	190,142	53,517	78,466	183,594
224	38	6,204	3,168	3,228	8,643	351	8	6,634	1,714	2,088	5,694
225	277	59,297	49,903	59,652	117,153	352	13	3,410	1,093	1,443	4,571
226	115	17,880	8,248	8,938	20,644	353	60	9,900	3,517	4,941	19,481
227	38	17,556	6,294	6,083	20,060	354	103	8,128	3,087	4,561	9,414
228	120	56,947	27,170	22,325	54,120	355	299	144,039	39,102	58,781	127,504
229	74	34,936	9,667	11,480	44,050	356	31	9,441	2,519	3,508	6,172
						357	7	-	364	-	-
23	1,721	67,025	115,440	84,163	273,348	358	1	-	45	-	-
231	603	13,485	30,918	25,009	72,817	359	324	7,890	2,076	2,774	7,629
232	295	17,615	36,272	22,155	81,806						
233	379	9,151	29,440	20,022	64,836	36	168	119,198	42,892	61,806	178,779
234	10	929	629	602	1,916	363	7	1,854	708	874	2,239
235	59	11,665	6,557	7,006	18,569	364	27	3,291	2,069	2,373	6,322
237	104	1,609	902	973	2,056	365	8	3,939	5,506	4,673	15,446
238	45	4,934	5,411	3,639	11,073	369	126	110,114	34,609	53,886	154,772
239	226	7,637	5,311	4,757	20,275						
						37	185	212,957	39,154	57,159	174,151
24	687	37,085	13,437	14,642	40,432	371	96	44,842	16,700	22,853	80,107
242	435	21,750	5,429	6,625	16,384	372	9	4,683	1,356	1,799	3,883
243	33	1,715	574	645	2,791	373	20	21,059	5,576	10,204	22,611
244	58	3,648	2,003	1,670	4,432	374	45	141,887	15,378	22,157	67,253
249	161	9,972	5,431	5,702	16,825	379	15	486	144	146	297
25	419	22,409	13,808	13,564	39,782	38	287	23,121	12,447	17,207	42,434
251	397	22,113	13,184	12,979	37,354	381	48	8,893	3,937	6,167	13,358
259	22	296	624	585	2,428	382	9	3,189	1,831	2,614	8,141
						383	70	3,787	1,637	2,259	5,514
26	329	104,740	28,276	35,976	136,454	384	151	5,295	3,077	3,619	9,304
261	2	-	166	-	-	386	7	-	234	-	-
264	159	84,059	19,232	26,591	98,920	387	2	-	1,731	-	-
265	162	17,302	8,142	8,348	31,291						
266	6	2,880	736	867	4,035	39	500	29,729	19,567	21,587	65,109
						391	70	1,327	530	742	1,756
27	1,919	130,407	43,642	71,246	175,626	393	15	2,404	432	491	1,228
271	1,721	123,907	39,390	64,147	164,183	394	45	2,918	3,060	2,711	7,190
278	90	2,315	1,770	1,939	3,624	395	35	1,983	913	1,308	3,155
279	108	4,185	2,482	5,160	7,819	396	16	5,565	5,443	6,550	19,974
						398-99	319	15,532	9,189	9,785	31,806
28	577	114,276	21,611	32,646	172,757						
281	17	16,894	1,942	3,549	33,124						
283	107	11,264	3,861	5,578	26,024						
284	113	14,293	1,800	2,910	20,000						
285	104	19,526	3,827	6,311	29,599						
286	26	3,374	901	800	3,235						
287	26	4,045	1,143	1,394	5,488						
289	184	44,880	8,137	12,104	55,287						
29	142	163,332	16,166	31,806	231,049						
291	41	133,380	11,317	24,274	161,844						
295	25	1,443	282	323	2,765						
299	76	28,509	4,567	7,209	66,440						
30	56	13,383	5,377	6,699	32,748						
301	5	8,116	2,493	3,466	21,826						
306	51	5,267	2,884	3,233	10,922						
31	254	38,690	28,296	27,278	114,815						
311	48	24,926	8,530	10,286	51,234						
312	15	1,134	167	249	1,057						
314	82	7,905	14,042	11,986	37,682						
315	3	190	133	95	237						
316	29	724	1,426	1,246	4,383						
319	77	3,811	3,998	3,416	20,222						
32	606	166,671	44,556	52,635	139,559						
321	38	32,545	8,975	10,500	30,492						
322	55	18,017	7,449	9,468	31,231						
323	22	742	479	445	1,046						
324	24	45,763	6,488	9,617	24,303						
325	151	41,274	10,914	10,637	22,905						
326	29	4,936	2,860	3,205	6,109						
327	236	12,887	3,029	3,138	8,347						

Detail may not add to total because of rounding.



## 1939 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production
Total	15,270	\$3,413,046	1,063,232	\$1,382,046	\$5,166,376						
20	3,995	316,059	93,735	119,122	727,278	329	60	\$11,281	5,117	\$7,050	\$21,710
201	183	18,914	9,375	14,354	114,272						
202	455	30,942	6,212	8,756	45,074	33	630	1,114,549	179,169	277,548	964,562
203	97	26,260	10,756	6,734	38,660	331	190	981,753	139,058	222,289	732,714
204	464	13,888	2,684	3,222	26,436	332	162	51,636	18,045	21,077	57,878
205	1,661	58,805	31,487	40,778	138,421	333	39	29,199	6,876	10,606	46,000
206	3	27,581	2,267	3,478	56,699	334	14	3,663	1,423	2,173	18,535
207	202	30,852	12,347	13,368	86,298	336	116	17,624	6,262	8,788	39,775
208	536	73,837	12,729	21,117	169,396	339	109	30,674	7,505	10,615	69,660
209	394	34,980	5,878	7,315	52,022						
21	228	18,864	19,676	14,695	89,112	34	848	280,810	96,145	138,739	503,047
211	182	10,412	17,598	12,512	56,046	342	181	40,425	15,074	21,356	49,429
212	14	3,455	703	881	26,173	343	57	14,986	5,191	6,623	22,278
213	22	1,774	501	568	5,522	344	276	82,875	26,560	41,672	186,203
214	10	3,223	874	734	1,371	345	22	25,491	6,528	9,434	22,146
22	983	268,535	150,085	150,156	486,136	346	46	20,254	7,976	9,090	35,148
221	75	19,233	7,459	8,866	31,815	347	57	1,421	963	970	2,537
222	144	18,484	22,830	17,936	69,187	348	78	36,142	14,598	21,785	75,609
223	99	35,005	15,993	16,811	75,272	349	131	59,216	19,255	27,807	109,697
224	39	5,279	3,434	3,519	10,577	35	751	154,733	47,762	73,417	206,963
225	279	65,324	48,232	48,340	121,529	351	8	5,482	1,707	2,412	4,897
226	109	17,510	8,636	10,104	26,500	352	14	3,475	1,159	1,625	5,870
227	38	15,631	6,950	8,171	30,355	353	60	9,785	3,180	4,693	14,386
228	118	57,496	26,225	22,799	63,618	354	105	8,385	3,736	5,861	17,111
229	82	34,573	10,326	13,610	57,283	355	290	110,500	32,876	51,946	147,246
23	1,720	64,470	120,083	98,254	318,684	356	28	8,144	2,135	3,193	6,809
231	583	13,262	31,882	29,362	88,067	357	7	-	363	-	-
232	288	17,039	36,854	24,708	89,997	358	1	-	50	-	-
233	390	8,287	31,843	23,667	78,332	359	238	8,269	2,556	3,373	8,338
234	9	919	638	620	1,924	36	160	121,907	45,840	74,774	232,381
235	61	11,930	6,593	7,279	20,361	363	6	1,765	893	1,193	3,289
237	100	1,639	877	1,000	2,664	364	27	3,549	2,449	2,844	7,634
238	49	4,298	5,524	3,673	12,987	365	8	4,236	6,499	7,696	43,196
239	240	7,096	5,872	7,945	24,352	369	119	112,357	35,999	63,041	178,262
24	672	35,842	14,182	15,755	47,696	37	187	219,985	46,702	73,980	253,890
242	422	21,341	5,537	6,719	17,737	371	100	44,550	19,925	30,378	113,502
243	34	1,599	625	741	3,319	372	10	4,403	1,885	2,643	6,295
244	53	3,011	1,940	1,714	4,736	373	16	21,358	7,142	13,732	41,247
249	163	9,891	6,080	6,581	21,904	374	46	149,209	17,615	27,081	92,517
25	413	20,170	14,799	15,224	45,995	379	15	465	135	146	329
251	391	19,892	13,966	14,482	42,968	38	284	22,577	13,264	19,252	50,675
259	22	278	833	742	3,027	381	49	8,893	4,508	7,265	17,252
26	327	104,423	30,564	40,494	156,550	382	9	3,086	2,076	3,075	9,846
261	2	-	199	-	-	383	71	3,734	1,703	2,376	6,261
264	162	85,293	20,920	30,026	113,492	384	146	5,054	3,021	3,722	9,951
265	156	16,201	8,633	9,258	37,269	386	7	-	251	-	-
266	7	-	812	-	-	387	2	-	1,705	-	-
27	1,918	138,222	44,194	73,662	183,427	39	495	30,825	21,174	25,008	78,187
271	1,727	131,206	40,058	66,424	171,260	391	69	1,351	548	795	1,957
278	86	2,308	1,704	1,984	3,950	393	16	2,482	520	640	1,583
279	105	4,708	2,432	5,254	8,217	394	43	2,848	3,499	3,149	9,556
28	588	119,204	23,601	36,812	211,311	395	33	1,908	964	1,391	3,648
281	20	21,644	2,484	4,154	40,254	396	17	6,120	5,800	8,026	25,891
283	104	11,994	3,961	5,907	32,383	398-99	317	16,116	9,843	11,007	35,552
284	116	14,225	1,935	2,906	22,064						
285	103	22,358	4,346	7,429	34,347						
286	26	3,902	899	881	4,345						
287	30	4,401	1,178	1,602	6,682						
289	189	40,680	8,798	13,933	71,236						
29	142	167,749	16,530	32,799	249,165						
291	40	127,023	10,569	23,179	165,595						
295	25	1,664	388	454	2,700						
299	77	39,062	5,573	9,166	80,870						
30	59	13,848	6,115	8,586	41,123						
301	5	7,928	2,624	3,986	26,533						
306	54	5,920	3,491	4,600	14,590						
31	257	37,416	30,618	30,413	135,251						
311	47	23,097	8,859	11,364	60,926						
312	15	1,119	181	270	1,347						
314	80	8,106	14,934	13,066	42,705						
315	3	188	150	138	328						
316	31	755	1,571	1,424	5,251						
319	81	4,151	4,923	4,151	24,694						
32	613	162,858	48,994	63,356	184,943						
321	45	30,865	10,365	13,636	43,806						
322	52	17,163	7,485	10,328	34,792						
323	22	706	516	524	1,233						
324	24	44,470	6,562	10,507	31,208						
325	148	41,266	12,738	14,177	34,378						
326	27	4,384	3,155	3,597	7,331						
327	235	12,723	3,056	3,531	10,485						

Detail may not add to total because of rounding.

## 1940 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	15,481	\$3,428,223	1,153,728	\$1,579,797	\$6,185,894	\$2,839,370							
20	4,182	316,040	96,307	123,773	748,193	286,622	327	238	\$14,127	3,668	\$4,299	\$12,833	\$7,295
201	184	18,464	10,328	15,426	115,159	22,995	329	63	11,573	6,052	8,905	25,255	15,237
202	655	32,265	6,948	9,201	52,597	23,721							
203	96	26,976	10,614	6,946	38,039	18,021	33	653	1,066,602	195,913	328,827	1,350,764	547,125
204	147	14,065	2,401	2,782	30,608	5,670	331	199	930,709	148,636	257,496	1,016,931	389,537
205	673	59,938	31,666	41,703	145,367	77,689	332	163	51,538	20,873	29,890	86,369	49,976
206	3	25,569	2,169	3,392	48,962	10,143	333	39	29,369	7,520	12,101	76,949	29,298
207	203	28,819	13,462	14,534	95,278	39,845	334	13	3,937	2,122	3,395	23,952	11,882
208	533	75,290	13,067	22,671	170,243	67,667	336	120	19,739	7,899	11,410	49,428	20,501
209	388	34,654	5,652	7,118	51,940	20,871	339	119	31,310	8,863	14,535	97,135	45,931
21	206	18,163	19,057	15,578	92,273	38,676	34	858	288,092	109,609	167,487	629,363	317,544
211	163	9,813	16,848	13,222	59,388	32,559	342	184	43,463	18,380	26,907	74,985	47,239
212	12	3,458	725	774	26,259	2,881	343	58	12,557	5,585	7,436	26,622	13,528
213	22	1,839	512	638	5,286	2,086	344	283	97,019	34,521	55,916	230,602	107,485
214	9	3,053	972	944	1,340	1,150	345	22	27,475	7,705	11,194	28,237	15,255
22	982	259,369	145,157	145,455	495,610	239,284	346	48	20,914	8,499	10,338	39,967	16,554
221	74	18,758	7,339	9,090	34,771	13,491	347	56	1,359	1,098	1,113	3,137	1,699
222	136	16,557	20,400	16,777	60,616	26,804	348	79	27,094	11,728	18,446	92,934	45,047
223	99	33,615	14,803	16,633	80,742	28,635	349	128	58,211	22,093	36,137	132,879	70,737
224	37	4,738	3,512	3,386	10,602	5,325	35	759	207,677	71,689	121,237	291,977	179,689
225	299	61,536	47,884	44,486	122,642	61,479	351	8	6,475	2,298	3,515	11,758	6,645
226	106	16,188	8,799	10,238	27,567	17,501	352	13	3,259	1,195	1,822	6,317	3,308
227	35	15,569	7,104	8,558	35,236	15,685	353	60	10,720	3,488	5,627	17,743	9,858
228	118	58,426	24,673	22,208	61,302	35,271	354	116	8,092	5,441	9,087	27,860	18,416
229	78	33,982	10,643	14,079	62,132	35,093	355	303	161,781	53,559	92,662	207,985	128,847
23	1,733	66,451	126,779	104,049	327,048	154,930	356	28	8,702	2,608	4,072	8,611	5,159
231	551	13,097	33,272	31,683	92,565	44,629	357	6	-	153	-	-	-
232	282	17,613	35,668	24,865	80,411	34,925	358	1	-	57	-	-	-
233	424	8,555	35,872	27,226	81,166	43,850	359	224	8,357	2,890	4,185	10,935	7,007
234	10	954	768	686	1,952	1,353	36	163	124,999	55,668	94,300	315,915	176,763
235	63	12,648	6,736	7,498	21,547	11,261	363	7	1,708	943	1,218	3,651	2,024
237	97	1,261	790	971	3,180	1,372	364	27	3,481	2,791	2,995	8,098	4,997
238	53	4,503	6,489	4,567	14,626	6,885	365	10	4,693	7,666	8,541	41,880	14,632
239	253	7,820	7,184	6,553	31,601	10,655	369	119	115,117	44,268	81,546	262,286	155,110
24	663	33,905	13,766	15,445	51,082	25,348	37	174	232,237	61,983	97,704	408,521	167,461
242	405	19,948	5,134	6,284	18,547	9,202	371	92	47,226	22,481	37,237	153,068	55,062
243	40	1,531	616	747	3,456	1,254	372	11	7,546	5,166	6,970	14,989	9,497
244	53	2,637	1,885	1,734	5,273	2,501	373	11	21,624	7,935	16,468	41,828	21,818
249	165	9,789	6,131	6,680	23,806	12,391	374	45	155,435	26,257	36,877	198,277	80,870
25	433	21,756	16,745	18,208	57,175	27,839	379	15	406	144	152	359	214
251	411	21,352	15,682	17,121	53,240	26,332	38	288	24,698	14,829	22,446	58,854	36,810
259	22	404	1,063	1,087	3,935	1,507	381	51	9,718	5,262	9,246	22,883	15,142
26	332	106,575	31,636	42,981	178,131	81,018	382	10	3,795	2,466	3,682	12,051	5,918
261	2	-	181	-	-	-	383	73	4,234	1,925	2,629	7,516	4,381
264	163	87,769	22,043	32,459	130,386	61,061	384	144	5,152	3,115	3,866	10,185	8,123
265	161	17,072	8,949	9,798	42,355	17,513	386	8	336	269	472	1,085	662
266	6	-	463	-	-	-	387	2	-	1,792	-	-	-
27	1,906	124,401	44,705	77,107	193,942	130,806	39	496	30,740	21,578	26,712	84,215	48,155
271	1,714	117,562	40,606	69,693	181,339	121,017	391	71	1,378	616	854	2,296	1,297
278	87	2,325	1,734	2,014	4,032	2,912	393	17	2,452	564	767	2,023	1,077
279	105	4,514	2,365	5,400	8,571	6,877	394	40	2,854	3,947	3,566	10,020	5,222
28	566	112,475	24,219	39,385	250,322	125,720	395	32	1,684	1,007	1,515	3,925	2,364
281	20	17,617	2,575	4,788	48,680	22,860	396	17	6,042	5,663	8,297	25,084	19,191
283	104	10,590	3,868	6,200	36,027	24,775	398-99	319	16,330	9,781	11,713	40,867	19,004
284	101	14,006	1,899	2,925	22,228	10,560							
285	102	22,888	4,440	7,612	44,735	16,658							
286	22	4,268	859	950	4,486	2,154							
287	29	4,272	1,158	1,581	5,727	1,884							
289	188	38,834	9,420	15,329	88,439	46,829							
29	148	173,981	13,121	26,224	266,894	59,992							
291	41	137,351	6,940	15,814	182,838	35,361							
295	29	1,827	370	409	2,402	992							
299	78	34,803	5,811	10,001	81,654	23,639							
30	59	14,030	6,638	9,097	40,204	17,500							
301	5	7,932	2,506	3,773	22,166	7,396							
306	54	6,098	4,132	5,324	18,038	10,104							
31	251	35,258	29,855	29,781	130,621	45,877							
311	45	21,606	8,543	10,476	55,749	16,923							
312	14	581	191	288	1,061	494							
314	78	8,068	14,172	12,644	41,653	18,544							
315	3	143	161	165	400	202							
316	31	678	1,686	1,609	5,636	2,629							
319	80	4,182	5,102	4,599	26,122	7,085							
32	629	170,774	54,474	74,001	214,790	132,211							
321	49	32,201	11,818	16,269	51,787	33,032							
322	53	17,927	7,775	10,947	36,691	20,752							
323	23	698	513	568	1,596	784							
324	25	47,345	6,920	11,399	35,688	20,821							
325	153	41,580	14,481	17,254	42,346	27,754							
326	25	5,323	3,247	4,360	8,594	6,532							

Detail may not add to total because of rounding.



## 1941 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	15,454	\$3,507,807	1,373,017	\$2,232,848	\$8,782,584	\$4,168,068							
20	4,097	313,696	101,798	137,828	883,643	328,329	329	69	\$12,229	7,695	\$13,484	\$45,555	\$26,625
201	194	19,718	10,897	16,690	139,625	25,862							
202	641	32,306	7,604	10,477	64,844	28,774	33	691	1,098,737	248,215	484,835	2,086,460	934,629
203	95	26,778	10,954	8,065	47,502	21,147	331	208	934,060	175,076	353,123	1,456,812	614,625
204	435	13,720	2,609	3,278	35,624	6,217	332	170	65,292	32,182	56,894	161,377	101,354
205	1,621	60,012	32,465	45,033	161,541	85,411	333	38	30,111	8,620	15,522	104,714	43,979
206	3	25,653	2,176	3,352	55,007	11,678	334	13	6,297	2,870	5,780	42,965	21,541
207	202	28,964	14,506	16,808	114,634	46,383	336	120	20,845	10,006	18,341	92,902	41,394
208	523	75,443	14,652	26,340	201,114	77,016	339	142	42,132	19,461	35,175	227,690	111,736
209	383	31,102	5,935	7,785	63,752	25,841							
21	199	17,668	19,955	17,106	97,709	42,387	34	880	326,265	144,829	265,446	1,026,598	516,980
211	1	-	435	-	-	-	342	190	48,568	24,164	42,845	116,713	71,916
212	166	9,688	17,959	14,905	66,186	36,586	343	56	14,353	6,535	10,163	36,854	20,446
213	22	1,892	491	635	5,241	2,010	344	287	105,720	40,473	78,971	348,970	152,356
214	10	-	1,070	-	-	-	345	23	25,053	9,752	17,811	54,012	29,768
22	973	255,667	146,871	175,651	636,103	304,023	346	48	20,905	10,129	13,553	53,536	22,703
221	70	18,816	7,635	11,040	43,523	17,426	347	60	2,552	1,997	3,361	11,306	7,303
222	129	17,140	20,270	20,312	71,760	31,616	348	84	30,372	15,468	29,152	136,482	64,063
223	97	33,887	17,844	24,489	126,535	44,463	349	132	78,742	36,311	69,590	268,725	148,425
224	40	5,083	4,219	4,811	18,327	9,337	35	793	226,801	95,920	195,155	487,426	292,822
225	307	59,378	43,498	48,642	142,338	72,697	351	8	7,042	2,968	5,608	16,579	9,115
226	109	16,805	9,566	13,245	36,237	22,922	352	13	3,348	1,319	2,366	9,006	4,543
227	37	14,610	7,962	11,305	48,698	20,664	353	59	12,364	4,456	8,692	24,708	14,139
228	107	55,614	23,789	24,136	67,585	40,811	354	133	10,302	8,425	16,706	57,582	38,259
229	77	34,334	12,088	17,671	81,100	44,087	355	311	173,813	70,070	146,862	339,617	202,960
23	1,721	70,124	143,347	137,708	434,062	207,638	356	29	10,237	4,058	7,264	16,499	9,670
231	542	13,971	38,650	44,264	122,551	59,837	357	6	-	164	-	-	-
232	278	18,403	38,531	31,483	105,301	46,404	358	1	-	64	-	-	-
233	430	9,417	39,514	34,378	100,397	52,735	359	233	9,410	4,396	7,318	22,402	13,551
234	9	925	914	876	2,158	1,576	36	169	133,245	77,857	158,572	518,656	291,946
235	61	12,915	7,298	9,311	29,983	15,289	363	4	1,179	898	1,414	4,751	2,587
237	95	1,135	919	1,144	3,452	1,737	364	28	4,344	3,066	3,946	11,896	6,461
238	54	4,768	8,174	6,714	21,808	11,153	365	10	5,184	8,945	12,640	55,333	19,810
239	252	8,590	9,347	9,538	48,412	18,907	369	127	122,538	64,948	140,572	446,676	263,088
24	668	33,337	15,285	18,960	63,244	32,040	37	187	234,278	90,379	184,846	609,583	291,741
242	418	19,204	5,784	7,710	23,302	11,609	371	95	50,666	29,199	55,833	202,552	74,409
243	40	1,665	708	1,076	5,004	2,763	372	22	13,702	14,859	28,514	62,797	41,893
244	51	3,093	2,175	2,266	7,214	3,511	373	13	22,378	14,191	33,978	68,710	39,043
249	159	9,375	6,618	7,908	27,724	14,157	374	42	147,111	31,959	66,296	275,000	136,064
25	429	22,548	18,356	22,631	75,713	37,111	379	15	421	171	225	524	332
251	409	22,135	17,178	21,525	71,699	35,302							
259	20	413	1,178	1,106	4,014	1,809	38	287	26,202	18,694	32,086	100,070	44,456
26	335	109,897	34,851	53,825	232,874	108,773	381	49	11,410	7,351	14,689	36,597	22,819
261	1	-	147	-	-	-	382	10	-	2,634	-	-	-
264	165	89,615	23,769	39,892	166,399	79,389	383	73	3,652	2,430	3,344	10,371	5,815
265	163	18,560	10,415	13,010	60,919	27,114	384	145	5,241	3,681	4,719	13,846	11,157
266	6	-	520	-	-	-	386	8	283	329	727	1,448	845
27	1,867	125,050	45,184	81,584	205,538	137,725	387	2	-	2,269	-	-	-
271	1,675	118,016	40,545	73,864	192,426	127,757	39	500	30,498	24,222	33,771	112,506	63,178
278	88	2,428	2,133	2,229	4,724	3,291	391	69	1,348	650	1,008	2,708	1,551
279	104	4,606	2,506	5,491	8,388	6,677	393	16	2,512	608	883	2,370	1,277
28	552	121,009	28,413	50,819	336,466	179,620	394	42	3,007	4,247	4,316	12,062	6,516
281	22	22,047	3,744	7,642	63,440	30,516	395	32	1,602	1,193	1,922	5,646	3,751
283	103	10,354	4,318	7,046	42,638	28,850	396	17	6,110	6,587	10,715	32,997	24,997
284	100	13,805	1,970	3,338	28,293	15,284	398-99	324	15,919	10,937	14,927	56,723	25,086
285	97	23,667	4,929	9,237	56,508	23,494							
286	22	5,003	1,061	1,473	7,151	3,402							
287	25	3,922	1,000	1,443	5,945	2,032							
289	183	42,211	11,391	20,640	132,491	76,042							
29	143	127,513	13,747	29,725	335,600	82,185							
291	37	87,256	7,266	17,457	224,107	46,388							
295	30	1,681	388	513	3,692	1,708							
299	76	38,576	6,093	11,755	107,801	34,089							
30	60	15,471	8,378	13,285	59,594	26,968							
301	5	9,067	2,907	5,242	32,052	11,917							
306	55	6,404	5,471	8,043	27,542	15,051							
31	248	36,670	32,378	38,755	180,691	65,805							
311	45	22,537	9,245	13,471	77,836	25,700							
312	14	593	209	376	2,294	687							
314	77	8,210	15,474	16,859	56,336	24,483							
315	3	261	187	205	497	254							
316	29	801	1,835	2,110	7,203	3,354							
319	80	4,268	5,428	5,734	36,525	11,327							
32	655	183,131	64,338	100,260	300,048	179,712							
321	52	34,283	13,065	21,044	68,728	42,096							
322	50	19,460	9,369	14,120	49,117	26,861							
323	23	664	653	657	2,193	1,089							
324	26	53,530	7,171	13,269	41,877	23,901							
325	151	42,481	17,128	25,687	62,324	40,232							
326	26	6,247	4,712	5,933	11,800	8,540							
327	258	14,237	4,545	6,066	18,454	10,368							

Detail may not add to total because of rounding.



## 1942 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	14,825	\$3,631,307	1,484,208	\$2,883,682	\$11,111,091	\$5,506,792							
20	3,936	319,890	102,939	153,815	1,048,856	385,818	329	64	\$13,037	8,444	\$16,782	\$54,610	\$33,033
201	184	20,216	10,595	18,774	171,525	26,784							
202	684	34,007	8,171	12,601	80,949	34,615	33	688	1,107,301	264,193	600,137	2,637,236	1,241,424
203	94	29,179	13,214	10,482	69,380	30,580	331	208	897,672	165,158	382,334	1,598,067	680,212
204	424	14,130	2,780	3,800	45,834	7,266	332	166	61,623	35,520	77,621	238,000	152,439
205	1,497	61,431	31,731	49,034	193,665	97,508	333	33	29,511	8,551	17,886	114,182	43,504
206	3	22,338	2,081	3,513	47,421	9,982	334	13	6,986	3,388	8,291	65,338	31,794
207	185	29,084	13,979	18,178	130,721	52,522	336	116	21,944	10,650	22,682	102,079	44,208
208	499	78,702	14,392	29,058	234,605	99,391	339	152	89,565	40,926	91,423	519,570	289,267
209	366	30,803	5,996	8,375	74,756	27,170							
21	182	18,125	19,148	20,192	106,356	46,718	342	185	50,780	27,483	58,562	149,491	98,860
211	144	10,445	17,468	17,840	76,916	40,968	343	50	11,362	5,385	9,283	24,792	13,414
212	10	3,275	519	822	23,135	2,736	344	267	110,997	44,786	99,439	380,123	178,143
213	20	1,394	481	672	4,858	1,860	345	21	25,872	9,467	18,996	59,303	33,472
214	8	3,011	680	858	1,447	1,154	346	43	20,290	7,596	11,875	42,475	18,698
22	935	246,867	136,160	191,548	683,840	319,210	347	55	2,802	1,984	3,648	10,760	7,008
221	66	14,171	5,940	8,119	47,785	18,474	348	81	28,278	16,695	35,689	163,092	80,344
222	133	18,367	20,456	24,137	85,422	39,371	349	145	131,902	59,384	150,109	627,155	328,738
223	99	37,420	17,926	29,341	138,695	45,676	35	765	263,163	123,051	296,037	825,471	496,172
224	38	5,587	4,373	6,245	28,269	12,857	351	7	7,176	3,982	9,163	29,301	16,050
225	292	54,812	36,517	49,089	143,258	75,216	352	13	3,388	1,420	3,204	8,655	4,616
226	106	18,204	9,123	14,742	41,730	25,405	353	54	12,803	5,360	12,107	32,714	19,430
227	36	13,452	7,146	10,630	43,403	18,944	354	125	13,212	12,497	30,270	104,743	69,441
228	90	50,273	20,247	25,683	73,917	44,089	355	300	205,986	87,845	216,316	580,192	342,868
229	75	34,581	14,432	23,562	81,361	39,178	356	28	10,133	5,656	12,676	37,258	22,720
23	1,659	75,117	144,025	162,741	530,985	263,140	357	6	-	217	-	-	-
231	532	17,157	42,536	55,932	137,188	76,346	358	1	-	68	-	-	-
232	268	19,415	37,678	37,010	140,383	62,420	359	231	10,175	6,006	11,805	31,382	20,166
233	413	9,912	37,134	38,685	117,741	62,943	36	171	148,982	94,315	219,313	662,541	419,204
234	9	938	881	892	2,280	1,384	363	3	345	365	531	14,152	8,006
235	58	12,443	6,462	9,032	31,749	16,695	364	26	3,878	2,689	3,584	9,880	6,156
237	87	1,037	700	1,011	3,600	1,687	365	13	7,001	14,466	21,146	76,709	38,495
238	57	5,003	8,045	8,126	31,192	14,848	369	129	137,758	76,795	194,052	561,800	366,547
239	235	9,212	10,589	12,053	66,852	26,817	37	181	212,475	125,149	323,374	1,021,724	514,112
24	644	35,107	15,190	21,603	67,952	33,065	371	87	47,467	26,159	61,490	228,491	85,579
242	404	19,222	5,878	8,549	27,672	13,127	372	26	15,037	30,677	74,586	223,733	135,218
243	39	1,875	765	1,268	5,904	2,316	373	14	32,672	37,937	114,067	262,624	137,959
244	53	4,202	2,124	2,984	10,778	5,049	374	39	116,885	30,217	72,983	306,307	155,020
249	148	9,808	6,423	8,802	23,598	12,573	379	15	414	159	248	569	336
25	400	22,736	15,945	22,460	75,834	36,363	38	284	26,527	20,788	41,266	109,810	73,669
251	383	22,290	15,323	21,596	72,485	34,910	381	52	11,547	8,970	21,479	58,890	39,030
259	17	446	622	864	3,349	1,453	382	9	3,762	2,754	5,325	14,396	8,913
26	301	108,421	32,830	57,426	243,553	118,193	383	73	4,159	2,596	3,986	12,306	7,500
261	1	-	90	-	-	-	384	140	4,862	3,830	5,405	15,962	12,711
264	135	88,194	22,379	42,637	180,692	89,262	386	8	-	374	-	-	-
265	159	18,543	9,893	13,791	57,935	26,717	387	2	-	2,264	-	-	-
266	6	-	468	-	-	-	39	468	32,026	21,890	36,035	115,116	63,104
27	1,756	120,818	43,257	81,377	209,161	138,475	391	66	1,524	588	1,103	3,183	1,757
271	1,569	112,785	38,357	73,060	192,819	127,115	393	13	2,521	616	976	2,078	1,277
278	87	2,257	2,401	2,454	6,278	3,960	394	38	3,064	3,106	3,690	9,843	5,735
279	100	5,776	2,499	5,863	10,064	7,400	395	31	1,636	1,397	2,462	6,917	4,076
28	542	128,495	31,893	61,615	377,094	198,244	396	17	6,603	4,950	10,067	19,489	13,906
281	24	26,892	4,447	10,338	72,164	33,016	398-99	303	16,678	11,233	17,737	73,606	36,353
283	98	10,444	4,873	7,772	53,616	35,826							
284	91	13,594	1,935	3,516	29,825	13,469							
285	95	24,683	4,730	9,542	51,067	21,284							
286	22	4,625	1,053	1,633	7,643	3,661							
287	25	4,132	1,049	1,669	6,564	2,139							
289	187	44,125	13,806	27,145	156,215	88,849							
29	136	138,798	14,640	33,961	335,575	88,172							
291	36	99,184	7,803	19,332	203,635	44,194							
295	27	1,108	443	484	3,208	1,520							
299	73	38,506	6,394	14,145	128,732	42,458							
30	52	17,185	8,644	15,853	66,479	33,754							
301	5	9,255	3,117	5,764	26,393	9,746							
306	47	7,930	5,527	10,089	40,086	24,008							
31	244	35,734	31,530	43,712	213,571	78,797							
311	46	21,352	9,044	15,506	101,051	31,166							
312	14	626	201	418	4,293	1,997							
314	73	8,004	14,433	18,357	64,525	28,582							
315	3	261	193	282	764	372							
316	29	859	2,011	2,444	8,454	4,100							
319	79	4,632	5,648	6,705	34,484	12,580							
32	634	191,257	65,841	113,616	322,746	200,481							
321	49	34,334	12,872	21,608	60,887	43,196							
322	50	19,276	9,893	16,503	58,930	33,277							
323	21	727	515	660	2,453	1,481							
324	25	58,252	7,265	14,739	43,992	23,056							
325	148	42,903	17,130	28,577	67,221	43,545							
326	28	6,337	5,019	7,717	14,723	11,201							
327	249	16,391	4,703	7,030	19,930	11,692							

Detail may not add to total because of rounding.

## 1943 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	14,665	\$3,743,674	1,570,120	\$3,471,751	\$12,989,005	\$6,496,688							
20	3,794	313,146	105,270	172,356	1,236,510	422,263	329	69	\$15,371	8,689	\$20,481	\$61,156	\$37,428
201	179	20,322	11,449	19,574	190,138	30,612							
202	639	32,402	7,711	12,637	80,083	34,115	33	707	1,154,094	294,131	756,023	2,964,510	1,365,267
203	95	31,255	13,606	13,711	77,520	34,355	331	206	868,640	154,702	410,996	1,711,123	709,295
204	404	14,528	3,019	4,578	66,674	10,071	332	159	71,124	39,760	95,257	258,305	163,532
205	1,439	62,131	32,790	55,428	221,794	108,478	333	34	28,873	8,094	19,131	123,162	45,666
206	3	20,426	2,325	4,812	77,532	16,376	334	13	8,401	3,202	8,411	57,646	29,351
207	195	29,656	12,902	19,519	153,080	63,855	336	116	21,514	10,753	26,365	115,461	47,560
208	489	73,769	15,215	32,930	289,480	96,219	339	179	155,542	77,620	195,863	698,813	169,863
209	351	28,657	6,253	9,167	80,209	28,182							
21	189	21,514	18,167	22,518	120,841	55,013	34	810	430,326	178,883	442,754	1,462,551	766,199
211	151	12,726	16,431	20,002	92,976	49,508	342	181	51,047	25,227	59,704	173,055	112,277
212	13	3,151	649	919	20,920	2,397	343	43	11,582	4,456	9,231	23,715	12,979
213	18	1,420	468	735	5,348	1,849	344	252	137,809	41,073	99,916	340,844	169,874
214	7	4,217	619	862	1,597	1,259	345	22	26,636	10,524	23,855	64,877	35,317
22	942	240,706	127,404	214,019	731,930	346,467	346	38	17,751	6,676	11,333	32,744	13,056
221	66	17,535	8,463	13,647	60,670	25,106	347	54	2,562	1,831	3,821	11,109	7,279
222	132	17,490	19,017	26,769	92,720	40,799	348	78	44,880	21,170	52,309	164,693	81,138
223	99	38,780	15,786	30,234	149,191	52,592	349	142	138,059	67,926	182,585	651,514	334,279
224	42	5,427	4,402	6,847	26,892	10,880							
225	292	54,958	32,494	56,239	166,743	88,323	35	809	212,105	109,038	291,034	1,239,645	816,949
226	109	17,691	8,824	16,328	50,495	29,671	351	7	6,470	4,204	11,295	43,720	21,213
227	38	8,218	2,639	4,458	23,679	10,432	352	13	2,751	1,560	4,109	14,519	6,992
228	83	47,373	19,227	28,297	80,765	47,717	353	51	11,748	4,948	12,881	42,076	25,088
229	81	33,224	16,552	31,200	80,775	40,947	354	146	14,442	14,396	40,271	121,375	82,731
23	1,689	80,829	142,492	187,884	586,269	304,080	355	306	151,041	68,231	190,251	926,679	628,119
231	512	16,526	39,573	57,737	134,771	81,543	356	34	10,945	7,437	16,963	42,006	23,060
232	264	20,398	36,195	42,524	147,465	67,867	357	6	238	247	443	975	682
233	447	10,972	37,752	46,658	139,604	78,222	359	246	14,470	8,015	14,821	48,295	29,064
234	10	954	1,146	1,120	2,694	1,587							
235	61	12,333	6,144	10,945	34,707	18,384	363	2	-	262	-	-	-
237	88	902	718	1,275	4,511	2,225	364	26	2,870	2,082	3,458	9,406	5,851
238	57	4,834	8,231	9,477	32,494	16,632	365	21	-	23,883	-	-	-
239	250	13,910	12,733	18,148	90,023	37,620	369	135	137,901	85,469	230,256	642,707	400,903
24	624	35,237	16,750	27,132	79,952	39,724	37	189	255,738	181,164	519,945	1,386,607	750,961
242	384	18,037	5,945	9,401	27,758	14,099	371	77	26,158	16,269	40,305	245,755	84,902
243	40	1,868	767	1,556	7,374	3,118	372	43	73,310	57,807	163,537	350,662	228,497
244	56	4,559	2,530	3,804	14,698	6,956	373	14	37,877	73,309	228,340	467,033	266,837
249	144	10,773	7,508	12,371	30,122	15,551	374	41	117,904	33,596	87,451	322,158	170,240
25	389	20,251	13,361	20,442	66,178	32,371	379	14	489	183	312	999	485
251	370	19,874	12,636	19,676	63,110	31,081							
259	19	377	725	766	3,068	1,290	38	296	24,842	23,430	52,222	140,003	88,735
26	319	105,007	32,800	63,766	265,392	125,908	381	55	10,058	10,688	26,684	77,016	45,056
261	1	-	114	-	-	-	382	9	3,836	3,030	7,820	18,322	11,888
264	154	84,710	21,951	46,230	190,201	91,442	383	76	3,896	2,731	4,728	13,434	7,554
265	158	18,778	10,294	16,500	68,103	30,641	384	146	4,773	3,972	6,712	18,992	15,169
266	6	-	441	-	-	-	386	8	-	357	-	-	-
27	1,686	120,667	42,563	85,416	235,625	159,959	387	2	-	2,652	-	-	-
271	1,495	113,559	37,578	75,979	217,515	147,078							
278	87	2,372	2,261	2,887	6,324	4,233	391	74	1,669	727	1,505	5,255	2,596
279	104	4,736	2,724	6,550	11,786	8,648	393	9	511	172	284	609	392
28	553	150,714	35,682	78,235	477,526	235,147	394	39	2,042	1,763	1,994	7,021	3,911
281	27	45,669	5,566	13,992	124,975	51,301	395	32	1,824	1,486	3,210	8,276	4,866
283	101	11,233	5,871	11,221	69,931	47,488	396	14	6,041	4,686	8,828	12,007	8,051
284	95	15,092	2,093	4,286	42,393	19,436	398-99	302	19,254	12,521	23,296	85,289	41,889
285	91	24,600	4,571	10,045	53,407	20,537							
286	19	4,320	1,031	1,730	7,735	3,256							
287	26	4,449	1,112	2,106	7,400	2,632							
289	194	45,351	15,438	34,855	171,685	90,497							
29	131	156,323	15,402	40,264	396,979	104,460							
291	34	111,797	8,257	23,487	255,423	56,786							
295	25	1,270	273	552	3,080	1,405							
299	72	4,3256	6,872	16,225	138,476	46,269							
30	49	19,183	10,261	22,088	103,739	48,256							
301	5	9,497	3,793	8,992	42,588	17,525							
306	44	9,686	6,468	13,096	61,151	30,731							
31	244	34,943	28,069	42,857	207,764	74,676							
311	44	20,599	7,494	14,535	87,094	26,235							
312	12	599	165	388	3,110	1,432							
314	70	8,131	12,437	17,680	61,008	26,212							
315	4	282	200	324	1,141	570							
316	33	684	1,862	2,497	8,651	4,436							
319	81	4,648	5,911	7,433	46,760	15,791							
32	591	186,023	62,202	117,604	325,661	203,681							
321	44	33,128	13,697	24,000	68,769	49,789							
322	50	18,629	10,665	19,319	73,300	40,690							
323	21	958	555	727	3,095	2,089							
324	25	58,184	5,597	11,698	26,299	14,798							
325	132	39,992	14,133	25,779	60,679	36,193							
326	27	6,446	5,174	8,993	16,489	12,666							
327	223	13,315	3,692	6,607	15,874	9,728							

Detail may not add to total because of rounding.



## 1944 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	15,775	\$3,774,805	1,555,188	\$3,665,991	\$13,837,285	\$6,613,321							
20	3,874	333,519	114,258	197,523	1,462,502	477,112	329	75	\$15,927	8,671	\$21,364	\$58,804	\$34,545
201	197	21,991	11,489	21,969	209,459	34,270							
202	619	32,262	7,687	13,116	85,123	35,207	33	646	1,165,181	283,930	794,783	2,925,786	1,305,102
203	110	34,237	15,987	16,692	90,392	35,119	331	217	859,550	145,120	421,490	1,648,809	647,766
204	399	15,255	2,937	4,970	72,633	10,417	332	50	57,773	30,340	81,362	223,169	141,865
205	1,448	62,025	34,358	60,954	241,364	116,137	333	36	31,125	7,897	20,488	135,223	48,527
206	3	19,656	2,762	6,151	91,358	17,267	334	13	8,854	2,849	7,641	44,878	21,082
207	216	30,673	14,852	23,628	186,928	73,675	336	118	22,983	11,760	29,906	127,778	52,082
208	497	87,209	17,133	38,701	379,482	117,728	339	212	184,896	85,964	233,896	745,929	393,774
209	385	30,211	7,053	11,342	105,763	37,292							
21	201	23,022	16,831	23,309	135,427	60,760	34	842	361,832	151,197	384,453	1,407,288	740,075
211	1	-	569	-	-	-	342	197	62,780	28,425	69,852	175,600	112,673
212	173	13,230	15,147	20,553	101,453	54,038	343	42	11,694	4,208	10,473	27,732	15,245
213	18	1,222	535	771	5,973	1,956	344	258	133,365	39,383	105,581	347,553	173,451
214	9	-	580	-	-	-	345	24	26,488	10,607	23,992	56,656	30,421
22	1,038	240,871	122,340	221,806	775,231	360,304	346	34	7,780	4,462	7,577	39,722	14,750
221	64	14,906	5,166	10,115	49,554	18,599	347	63	2,728	2,133	4,857	12,787	8,480
222	144	19,095	18,977	29,350	98,666	46,431	348	79	24,817	15,029	37,669	158,586	79,614
223	105	38,117	15,305	31,042	151,125	52,592	349	145	92,180	46,950	124,452	588,652	305,441
224	42	5,566	3,395	6,336	48,844	16,046	35	935	209,940	109,441	306,849	1,095,723	648,021
225	344	55,394	31,659	57,385	174,457	90,155	351	8	5,980	3,979	10,463	43,087	22,438
226	121	19,211	8,850	17,016	51,354	30,718	352	14	2,458	1,702	4,397	15,670	7,764
227	45	8,585	2,973	4,628	24,676	10,063	353	50	12,172	4,752	12,603	54,448	28,854
228	91	47,460	21,300	33,679	88,935	53,886	354	169	13,649	14,245	39,956	113,686	78,387
229	82	32,537	14,715	32,255	87,620	41,814	355	352	150,970	68,643	202,251	750,006	442,024
23	1,870	89,729	148,040	207,455	637,746	333,935	356	38	10,554	6,833	17,179	47,084	25,335
231	526	17,486	39,040	61,861	148,310	86,678	357	6	255	184	426	731	525
232	278	21,212	33,673	42,466	151,252	70,311	359	298	13,902	9,103	19,574	71,011	42,696
233	544	15,790	42,716	54,556	154,253	91,430	36	216	168,284	119,616	323,109	1,007,851	568,772
234	12	1,036	1,295	1,720	4,341	3,035	363	3	335	283	442	1,353	809
235	65	12,388	6,258	11,718	38,569	18,534	364	26	2,793	1,955	3,550	10,862	6,644
237	93	1,097	760	1,438	5,362	2,525	365	36	22,383	30,590	63,291	287,682	137,046
238	67	4,985	8,559	10,416	36,598	19,601	369	151	142,773	86,788	255,826	707,954	424,272
239	285	15,735	15,739	23,280	99,061	41,821	37	198	294,979	186,943	572,026	1,596,349	801,814
24	947	36,396	18,326	30,257	100,702	50,781	371	76	26,935	17,443	44,509	243,054	85,511
242	686	20,201	8,082	12,794	35,098	19,259	372	50	84,384	52,122	149,115	330,673	200,306
243	39	1,709	661	1,495	6,594	2,528	373	17	34,943	68,539	233,679	591,030	305,539
244	62	4,615	2,629	4,469	18,767	7,777	374	42	148,246	48,648	144,382	430,514	209,975
249	160	9,871	6,954	11,499	40,243	21,217	379	13	471	191	341	1,078	485
25	407	20,760	12,624	21,425	96,558	46,987	38	314	25,472	23,955	53,619	138,845	86,725
251	388	20,371	14,945	20,738	93,433	45,649	381	65	10,728	11,259	27,391	70,296	43,050
259	19	389	679	687	3,125	1,338	382	8	-	3,081	-	-	-
26	348	105,828	33,416	68,391	329,758	152,635	383	84	4,219	2,577	4,625	12,091	7,098
261	1	-	108	-	-	-	384	147	4,925	4,009	6,849	19,146	15,154
264	169	80,022	20,147	44,976	186,332	85,378	386	9	548	346	778	2,334	1,175
265	173	24,312	12,771	22,346	132,941	61,711	387	1	-	2,683	-	-	-
266	5	-	390	-	-	-	39	533	33,256	23,196	44,508	157,673	85,321
27	1,734	127,839	41,528	92,729	284,899	197,709	391	76	1,908	713	1,611	5,791	2,939
271	1,533	117,784	37,205	81,463	234,552	161,554	393	8	584	197	333	858	527
278	90	2,716	1,443	3,429	7,555	5,231	394	43	1,956	2,175	2,517	20,844	12,178
279	111	7,339	2,880	7,837	42,792	30,924	395	34	1,916	1,397	3,305	8,151	4,322
28	620	148,503	37,883	87,667	552,192	247,617	396	14	5,466	4,255	9,053	19,750	14,909
281	28	41,695	5,514	15,597	173,912	64,906	398-99	358	21,426	14,459	27,689	102,279	50,446
283	106	11,954	6,243	13,127	69,729	47,052							
284	123	16,129	3,246	5,341	39,632	15,400							
285	95	24,134	4,519	10,878	63,905	22,042							
286	19	3,800	908	1,791	7,061	3,164							
287	24	4,352	954	2,210	9,100	3,303							
289	225	46,439	16,499	38,723	188,853	91,750							
29	137	158,078	16,010	45,975	483,670	121,819							
291	31	114,520	8,899	28,014	344,861	75,555							
295	32	1,559	362	669	5,563	2,498							
299	74	41,999	6,749	17,292	133,246	43,766							
30	53	18,904	11,936	27,045	130,791	61,280							
301	5	9,614	4,454	11,757	59,079	24,086							
306	48	9,290	7,482	15,288	71,712	37,194							
31	262	36,635	25,503	43,553	205,044	73,338							
311	43	21,163	6,751	15,188	84,612	24,379							
312	12	596	159	384	3,427	1,469							
314	73	8,612	11,764	17,697	61,773	26,466							
315	5	307	225	352	993	523							
316	36	944	1,552	2,360	8,497	4,097							
319	93	5,013	5,052	7,572	45,742	16,404							
32	600	175,777	58,215	119,509	313,250	193,214							
321	49	33,348	15,482	32,454	80,444	57,488							
322	49	19,644	10,097	18,775	68,336	37,436							
323	20	946	546	878	5,084	1,825							
324	20	49,642	3,902	8,406	16,995	9,220							
325	114	37,477	11,462	22,356	51,421	30,674							
326	32	5,448	4,652	9,004	16,596	13,078							
327	241	13,345	3,403	6,272	15,070	8,948							

Detail may not add to total because of rounding.



(Money figures in thousands of dollars)

C de	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	17,404	\$7,449,907	1,540,081	\$5,857,122	\$23,141,530	\$10,744,817							
0	3,287	556,309	115,768	374,702	2,456,694	811,533	327	380	\$36,753	6,238	\$20,995	\$70,178	\$39,440
1	248	35,280	14,371	54,541	427,228	84,866	329	81	33,300	9,051	38,548	142,649	91,035
2	461	48,875	7,616	25,132	163,489	61,778							
3	125	60,601	16,441	26,928	190,814	70,657	33	891	2,738,669	254,615	1,264,750	5,446,224	2,286,729
4	351	22,503	2,904	9,416	96,677	17,645	331	317	2,414,104	184,056	946,575	4,026,161	1,605,946
5	1,119	102,731	36,136	125,008	437,437	235,339	332	171	86,680	22,370	97,447	325,394	177,463
6	2	29,777	2,330	10,860	126,660	23,447	333	28	43,023	6,053	28,301	237,808	94,867
7	232	47,839	14,534	39,760	299,119	103,163	334	15	14,700	3,553	17,951	107,443	60,633
8	460	178,736	15,874	65,584	537,524	163,534	336	115	39,102	9,189	40,625	198,812	70,015
9	289	29,967	5,562	17,473	177,746	51,104	339	245	141,060	29,394	133,851	550,606	277,805
1	122	27,362	46,626	35,265	169,491	82,497	34	1,159	617,813	148,538	646,707	2,215,091	1,113,482
1	95	19,171	46,040	33,801	159,730	78,594	342	284	104,396	25,220	99,754	283,242	164,882
2	5	944	183	481	5,123	1,537	343	37	13,021	4,870	18,178	64,568	30,795
3	14	746	156	428	3,236	1,532	344	408	269,035	62,458	282,937	894,605	426,854
4	8	6,501	247	555	1,402	834	345	24	28,842	6,843	31,977	92,330	48,810
							346	36	26,614	4,550	18,534	78,308	35,333
2	1,038	329,117	106,136	313,054	1,143,609	526,887	347	106	7,273	2,336	8,626	52,103	21,619
1	37	6,451	1,813	6,564	31,413	10,726	348	119	58,680	15,727	70,101	318,610	149,001
2	128	36,598	15,270	43,412	175,121	66,569	349	145	109,952	26,534	116,600	431,325	236,188
3	73	36,227	8,430	29,454	132,987	42,734							
4	60	8,150	4,512	11,564	36,607	17,689	35	1,193	409,682	100,430	438,888	1,261,508	734,840
5	405	78,335	34,214	81,273	242,243	121,086	351	8	5,983	2,951	12,902	33,123	20,251
6	143	27,878	9,902	28,901	73,363	45,180	352	24	9,573	3,131	15,069	76,540	36,054
7	42	31,442	7,731	27,454	155,152	59,850	353	49	24,324	5,741	25,100	86,191	47,976
8	75	55,904	13,647	43,904	134,033	74,134	354	297	28,024	8,295	33,943	109,523	75,442
9	75	48,132	10,617	40,528	162,690	88,919	355	419	299,670	69,435	308,292	825,526	478,553
							356	47	16,399	4,442	19,296	64,507	37,072
3	2,168	133,685	185,675	400,883	1,108,866	594,386	357	6	-	219	-	-	-
1	383	22,390	38,993	102,169	258,211	141,587	358	1	-	37	-	-	-
2	245	32,647	35,641	74,432	229,364	110,714	359	342	25,293	6,179	23,598	64,328	38,464
3	948	35,605	80,397	150,218	365,592	218,442							
4	23	2,298	4,087	7,225	16,595	10,318	36	379	352,442	122,227	514,944	1,625,037	940,748
5	56	12,418	4,821	13,722	35,636	21,432	363	16	5,672	1,806	7,156	39,320	17,417
7	70	1,462	652	2,052	5,921	3,039	364	50	13,653	4,503	15,131	65,266	34,469
8	75	6,519	9,176	21,168	74,502	34,401	365	76	88,204	37,858	152,883	467,268	247,220
9	368	20,346	11,908	29,897	123,045	54,453	369	237	244,913	78,060	339,774	1,053,183	641,642
4	1,288	57,234	18,806	52,142	180,784	83,160	37	186	289,736	85,501	421,876	1,639,834	682,173
2	1,012	33,445	10,099	26,875	87,132	40,598	371	102	143,913	32,813	171,636	804,212	287,229
3	17	1,684	459	1,460	8,246	2,070	372	25	34,569	18,999	87,267	187,600	116,465
4	45	4,079	1,361	3,869	12,633	5,810	373	19	28,785	4,441	19,747	118,931	26,166
9	214	18,026	6,887	19,938	72,773	34,682	374	34	82,382	29,210	143,140	528,946	252,221
							379	6	87	38	86	145	92
5	531	43,490	21,589	66,809	220,753	113,871							
1	478	41,530	20,551	63,993	209,291	109,394	38	350	57,775	23,685	98,143	240,426	158,747
9	53	1,960	1,038	2,816	11,462	4,477	381	67	28,638	12,244	55,879	131,312	91,228
							382	7	9,754	2,935	13,151	35,481	17,910
6	419	241,561	42,477	170,633	714,858	341,831	383	104	8,526	2,716	9,016	24,410	14,065
1	1	-	34	-	-	-	384	152	6,434	3,143	9,347	24,180	20,111
4	236	181,921	25,877	110,924	454,862	224,043	386	15	1,340	649	1,893	5,163	3,727
5	179	57,558	16,163	57,889	245,349	110,493	387	5	3,083	1,998	8,857	19,880	11,706
6	3	-	403	-	-	-							
							39	691	62,783	28,566	89,638	277,935	140,186
7	1,753	251,819	60,160	251,212	641,795	431,118	391	84	2,045	740	2,066	5,894	3,055
1	1,569	238,668	54,628	228,846	602,644	401,000	393	12	4,130	783	3,074	9,000	4,512
8	78	3,162	2,087	5,649	11,052	8,429	394	102	12,453	9,171	24,002	78,961	37,343
9	106	9,989	3,445	16,717	28,099	21,689	395	34	5,081	1,733	7,273	19,834	12,867
							396	18	6,399	4,083	13,577	27,202	15,282
8	718	387,183	46,019	201,888	1,310,839	650,137	398-99	441	32,675	12,056	39,646	137,044	67,127
1	22	56,829	3,665	17,989	162,055	63,774							
2	100	18,740	6,198	20,984	92,007	46,832							
3	89	68,761	8,310	38,466	250,179	190,777							
4	115	16,099	2,599	9,669	51,855	24,732							
5	94	37,794	6,633	30,756	180,563	66,162							
6	6	768	133	436	1,506	667							
7	30	8,450	1,092	3,888	18,005	5,251							
9	262	179,742	17,389	79,700	554,659	251,942							
9	101	421,244	17,284	92,592	1,050,728	203,656							
1	16	360,030	12,213	68,878	808,489	132,792							
5	28	5,425	633	1,978	16,741	6,552							
9	57	55,789	4,438	21,736	225,498	64,312							
0	57	83,158	12,431	59,685	305,233	163,230							
1	5	62,197	6,158	33,737	205,312	107,407							
6	52	20,961	6,273	25,948	99,921	55,823							
1	272	38,752	36,513	86,805	292,827	138,272							
1	34	13,813	5,748	20,061	87,579	32,389							
2	8	363	125	456	1,587	623							
4	119	17,188	25,280	54,548	162,144	84,648							
5	4	303	145	368	876	478							
6	33	991	928	2,100	7,379	3,440							
9	74	6,094	4,287	9,272	33,262	16,694							
2	801	350,093	67,035	276,506	838,998	547,334							
1	63	55,646	14,237	69,983	205,397	141,738							
2	50	39,080	11,432	42,569	117,992	69,663							
3	22	1,075	523	1,867	6,292	3,669							
4	24	104,572	7,336	33,717	130,918	83,025							
5	131	65,847	12,914	50,670	127,943	89,540							
6	50	13,820	5,304	18,157	37,629	29,224							

Detail may not add to total because of rounding.

## 1946 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	16,828	\$3,852,200	1,489,197	\$3,268,321	\$11,752,780	\$5,412,184							
20	3,907	415,917	121,445	238,637	2,015,441	635,594	327	274	\$14,608	4,769	\$9,500	\$25,687	\$14,276
201	200	24,305	11,212	24,778	242,420	44,692	329	72	13,890	8,062	18,535	47,161	28,510
202	623	34,017	8,891	17,619	130,346	46,967							
203	113	40,056	16,744	19,874	114,074	46,399	33	774	1,212,027	256,536	623,286	1,967,313	863,280
204	395	17,604	3,292	6,520	93,230	13,501	331	223	984,339	166,095	405,384	1,275,928	517,284
205	1,428	66,088	35,801	73,115	310,927	139,841	332	171	76,841	31,078	71,736	173,926	106,838
206	3	19,443	2,713	5,672	81,980	16,105	333	33	29,176	8,472	21,770	109,406	41,097
207	236	33,659	14,248	25,469	186,655	77,086	334	15	10,641	2,935	7,662	36,172	17,833
208	509	148,941	20,674	50,723	726,857	210,660	336	114	25,212	11,653	29,270	104,743	43,128
209	400	31,804	7,870	14,867	128,952	40,343	339	218	85,818	36,303	87,464	267,138	137,100
21	287	28,315	21,334	30,950	152,664	75,425	34	891	308,978	135,452	310,818	960,145	493,776
211	243	15,796	19,803	28,328	133,407	69,664	342	216	66,085	27,725	64,847	157,917	100,106
212	15	3,224	470	974	11,085	2,633	343	44	14,284	5,874	12,865	36,112	18,885
213	19	1,353	390	657	6,125	1,651	344	279	102,985	43,075	100,784	343,623	154,045
214	10	7,942	671	991	2,047	1,477	345	21	21,107	9,254	20,124	48,815	24,639
22	1,113	249,657	139,699	282,706	966,632	472,199	346	38	10,435	5,859	10,607	39,145	16,427
221	57	12,522	5,469	11,967	56,491	24,100	347	69	3,015	2,345	4,894	14,659	8,201
222	146	22,623	20,899	38,623	138,248	65,332	348	88	29,356	15,385	34,591	124,686	63,871
223	112	39,396	18,780	40,964	200,630	72,537	349	136	61,711	25,935	62,106	195,188	107,602
224	43	5,326	3,636	7,512	25,782	12,477	35	1,011	202,608	94,780	240,589	615,262	362,581
225	389	62,674	37,835	78,173	227,051	126,334	351	7	4,656	3,059	7,140	17,844	9,304
226	131	18,671	11,060	23,697	62,866	40,328	352	16	3,461	2,255	5,662	20,068	9,809
227	57	11,311	6,778	12,644	53,083	22,981	353	52	11,883	4,619	11,263	33,895	17,253
228	94	43,662	22,471	40,819	102,519	60,090	354	200	15,147	9,920	26,688	72,927	50,125
229	84	33,472	12,771	28,307	99,962	48,020	355	385	143,101	62,977	164,323	397,776	236,415
23	2,062	97,463	160,695	254,235	819,516	403,462	356	39	9,106	5,251	11,186	32,408	16,989
231	522	19,020	40,022	71,548	217,972	105,557	357	6	-	237	-	-	-
232	314	28,634	39,668	57,894	213,312	95,181	358	1	-	117	-	-	-
233	666	17,226	49,826	73,403	193,451	115,368	359	305	14,818	6,345	13,569	36,595	21,103
234	13	1,038	1,549	2,488	6,384	4,330	36	241	128,140	108,824	245,286	561,965	311,027
235	64	12,200	6,505	13,723	43,752	20,000	363	5	6,313	11,386	27,744	41,195	30,190
237	93	1,098	956	2,098	8,719	3,811	364	37	3,963	3,182	5,822	21,173	11,481
238	88	5,893	10,445	14,274	47,964	24,559	365	34	26,328	23,914	48,144	139,051	57,468
239	302	12,354	11,724	18,807	87,962	34,656	369	165	91,536	70,342	163,576	360,546	211,888
24	1,142	40,897	23,341	39,930	122,615	61,657	37	183	269,430	99,733	249,154	661,862	324,441
242	846	21,859	10,428	17,126	45,920	25,847	371	83	62,888	32,539	83,230	227,130	101,283
243	36	2,073	1,294	2,720	12,716	4,241	372	25	13,804	9,628	20,744	29,391	17,383
244	66	5,330	2,627	4,043	14,068	6,372	373	17	26,675	13,417	37,240	79,895	46,920
249	194	11,635	8,992	16,041	49,911	25,197	374	46	165,696	43,969	107,556	324,546	158,377
25	443	24,049	15,997	30,963	103,696	51,525	379	12	367	180	384	900	478
251	416	23,526	15,235	29,679	96,850	48,886	38	317	28,919	23,579	53,363	123,268	82,788
259	27	523	762	1,284	6,846	2,639	381	66	13,070	10,104	25,251	50,598	35,871
26	573	119,024	39,807	89,758	367,745	169,601	382	6	-	2,975	-	-	-
261	1	-	164	-	-	-	383	87	4,678	3,103	6,212	15,678	8,733
264	187	88,806	24,106	58,799	232,708	108,774	384	146	4,880	4,381	8,850	25,064	20,404
265	179	28,512	15,022	29,478	124,411	55,215	386	10	897	400	945	1,761	1,067
266	6	-	515	-	-	-	387	2	-	2,616	-	-	-
27	1,737	137,022	53,195	135,350	361,423	246,652	39	584	42,222	28,428	59,570	187,155	99,027
271	1,537	128,032	46,609	119,467	331,210	223,238	391	79	4,690	982	2,389	8,192	3,694
278	86	2,576	2,742	4,333	9,526	6,842	393	11	2,232	574	1,409	4,738	2,713
279	114	6,414	3,844	11,550	20,687	16,572	394	65	3,283	4,916	6,919	18,900	10,558
28	619	138,048	34,693	88,651	505,483	248,475	395	33	2,190	1,511	3,678	10,526	5,446
281	20	27,230	5,951	16,454	94,908	39,818	396	18	5,397	5,305	12,397	35,310	25,013
283	102	11,847	5,642	13,758	82,883	59,748	398-99	378	24,430	15,140	32,778	109,489	51,603
284	131	16,678	2,753	6,498	51,533	21,577							
285	99	21,524	5,249	13,658	75,559	25,890							
286	12	2,125	462	724	2,814	1,398							
287	26	4,710	1,087	2,778	11,670	4,398							
289	229	53,934	13,549	34,781	186,116	95,646							
29	133	166,953	17,864	53,333	483,129	117,457							
291	24	122,272	10,678	34,165	323,280	69,442							
295	38	2,053	593	1,304	9,046	3,961							
299	71	42,628	6,593	17,864	150,803	44,054							
30	82	21,746	13,074	33,179	129,210	58,710							
301	5	7,760	5,524	15,840	74,794	29,620							
306	57	11,934	6,478	15,095	44,127	23,820							
307	20	2,052	1,072	2,244	10,289	5,270							
31	277	36,847	32,318	57,978	258,262	98,370							
311	41	18,356	7,564	17,707	90,918	29,045							
312	11	562	172	400	1,408	532							
314	92	10,212	16,936	26,822	97,576	43,411							
315	6	280	197	342	1,056	534							
316	38	1,198	1,978	3,412	12,090	5,625							
319	89	6,239	5,471	9,295	55,214	19,223							
32	652	183,938	68,403	150,585	389,994	236,137							
321	51	34,866	16,962	38,856	99,863	62,881							
322	52	22,999	11,751	25,265	85,534	47,852							
323	21	971	628	1,225	3,548	1,827							
324	24	51,507	6,704	16,557	44,780	24,204							
325	127	37,937	13,349	27,604	60,640	39,478							
326	31	7,160	6,178	13,043	22,781	17,109							

Detail may not add to total because of rounding.



## 1947 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	16,679	\$4,394,663	1,516,920	\$3,947,019	\$14,872,236	\$6,742,349							
20	3,825	457,985	121,972	268,067	1,945,486	631,619	327	273	16,882	4,852	11,133	33,603	19,449
201	199	26,566	12,024	30,541	337,603	55,370	329	70	14,092	7,495	21,354	59,494	34,268
202	596	36,305	8,616	18,538	136,714	41,714							
203	115	-	16,801	-	-	-	33	774	1,326,975	268,367	815,907	2,859,433	1,182,326
204	390	18,486	3,260	7,177	109,396	15,529	331	244	1,097,806	179,529	598,967	1,960,903	752,456
205	1,413	71,120	36,217	84,343	330,800	153,316	332	174	78,931	33,108	92,042	246,576	145,456
206	2	-	2,501	-	-	-	333	36	32,730	8,969	26,938	176,227	59,943
207	225	38,540	16,143	31,789	280,198	100,078	334	15	10,954	2,798	8,285	43,745	22,793
208	497	167,269	18,984	51,651	317,801	151,048	336	114	25,489	11,036	30,673	117,843	49,180
209	388	36,568	7,426	16,322	181,759	49,237	339	191	81,065	32,927	99,002	314,539	152,498
21	256	24,543	20,577	32,243	158,028	75,808	34	927	357,000	142,889	394,274	1,346,464	690,695
211	215	17,104	19,240	29,692	141,089	70,405	342	228	70,769	27,805	75,218	187,685	117,951
212	12	3,166	297	812	8,678	1,811	343	44	16,097	6,036	16,079	51,745	26,188
213	20	1,456	318	614	5,840	1,928	344	290	127,192	48,360	136,378	503,202	238,425
214	9	2,817	722	1,125	2,421	1,664	345	22	22,788	9,399	25,130	70,768	36,071
							346	40	12,392	7,020	15,078	56,263	24,095
22	1,130	277,448	139,945	321,064	1,100,179	533,873	347	74	3,587	2,601	6,416	20,271	10,715
221	63	10,680	4,526	10,435	56,635	22,713	348	91	35,528	15,500	42,922	182,217	90,021
222	143	26,448	21,406	46,153	175,964	80,807	349	138	68,647	26,168	77,053	269,313	147,229
223	113	40,477	18,649	45,096	197,072	73,344							
224	47	5,426	3,878	8,863	31,604	13,706	35	1,010	226,011	99,709	294,660	859,354	481,182
225	388	72,528	37,342	84,160	225,288	133,208	351	7	5,549	2,968	8,467	18,558	10,129
226	136	18,874	11,272	26,290	67,592	42,046	352	23	9,255	3,026	8,531	44,948	20,642
227	62	16,644	8,726	20,647	82,225	35,078	353	53	12,131	4,560	13,247	47,120	25,307
228	92	50,176	21,303	47,628	117,932	66,676	354	197	15,015	8,937	26,024	73,401	50,528
229	86	36,195	12,843	31,792	145,867	66,295	355	392	156,732	68,608	208,211	585,913	324,798
							356	44	12,186	5,640	15,048	43,031	23,391
23	2,032	106,577	167,122	282,248	907,361	447,321	357	5	-	270	-	-	-
231	502	21,259	42,333	84,488	251,500	126,074	358	2	-	181	-	-	-
232	334	32,753	45,116	71,356	247,883	109,678	359	287	14,563	5,519	14,048	42,201	24,597
233	655	18,616	50,206	74,508	204,417	121,083							
234	17	1,270	2,213	3,582	8,300	5,697	36	255	165,863	116,412	343,328	1,073,567	562,786
235	61	12,155	6,384	13,950	41,020	19,381	363	8	14,321	11,502	32,646	129,277	67,683
237	84	1,083	896	2,050	6,892	3,341	364	38	3,691	3,072	6,603	22,235	12,683
238	98	7,034	10,561	15,083	50,165	22,856	365	36	27,207	22,480	56,107	217,487	91,402
239	281	12,407	9,413	17,231	97,184	39,211	369	173	120,644	79,358	247,972	704,568	391,018
24	1,098	45,012	22,565	45,219	147,609	69,617	37	169	253,431	84,043	282,804	898,739	406,040
242	826	24,201	10,813	19,720	57,036	29,063	371	86	59,460	30,567	126,148	364,809	159,942
243	32	2,447	972	2,540	13,182	3,893	372	12	9,921	3,979	9,551	23,276	11,998
244	56	4,197	2,116	3,978	14,999	6,690	373	15	22,655	6,732	19,489	33,265	19,391
249	184	14,167	8,664	18,981	62,392	29,971	374	46	161,141	42,632	127,351	476,900	214,399
							379	10	254	133	265	489	310
25	455	26,175	17,452	37,878	120,942	59,398							
251	426	25,485	16,379	36,256	112,651	56,803	38	314	33,904	23,089	59,666	140,625	91,386
259	29	690	1,073	1,622	8,291	2,595	381	63	15,945	9,354	27,020	57,644	38,440
							382	8	4,610	3,554	9,682	26,854	14,310
26	367	142,661	39,724	105,522	466,590	210,656	383	87	5,636	2,773	6,216	15,817	9,489
261	-	-	-	-	1,782	620	384	143	4,482	4,041	8,787	21,798	17,237
264	182	104,239	24,163	67,806	285,292	131,746	386	9	1,336	398	1,023	2,177	1,374
265	179	36,470	15,082	36,461	172,228	74,930	387	4	1,895	2,969	6,938	16,335	10,536
266	6	1,952	479	1,255	7,288	3,360							
							39	580	146,201	27,696	62,831	195,812	105,115
27	1,718	171,736	54,827	158,997	422,588	279,106	391	83	104,762	1,049	2,479	6,630	3,724
271	1,525	161,436	48,398	140,768	389,706	253,667	393	12	2,870	854	2,405	8,165	4,581
278	84	2,744	2,509	5,009	11,089	7,797	394	80	4,922	5,844	10,378	29,803	17,046
279	109	7,556	3,920	13,220	21,793	17,642	395	33	2,590	1,549	4,035	11,450	5,591
							396	19	6,167	4,972	12,609	35,956	24,470
28	608	168,510	34,774	99,154	656,895	293,213	398-99	353	24,890	13,428	30,925	103,808	49,703
281	19	28,761	5,452	17,013	121,192	48,910							
283	95	18,885	5,308	14,572	90,909	64,386							
284	129	18,861	2,779	6,954	70,399	26,216							
285	101	26,864	5,856	17,233	117,772	37,526							
286	9	1,346	631	1,202	3,003	1,413							
287	25	4,900	998	2,662	12,903	4,428							
289	230	68,893	13,750	39,518	240,717	110,334							
29	132	190,533	18,138	61,816	644,318	161,746							
291	23	145,496	11,075	40,789	424,680	98,387							
295	34	2,519	467	1,080	10,137	3,652							
299	75	42,518	6,596	19,947	209,501	59,707							
30	84	29,915	13,277	36,540	141,462	60,728							
301	5	13,563	5,293	16,639	79,924	27,892							
306	51	12,804	6,206	15,821	48,919	25,826							
307	28	3,548	1,778	4,080	12,619	7,010							
31	280	40,029	33,018	64,273	313,424	112,308							
311	45	21,554	8,658	22,395	143,109	41,053							
312	12	580	173	462	2,852	1,089							
314	96	10,891	17,456	30,038	110,874	47,106							
315	5	287	174	318	933	442							
316	42	1,423	2,064	3,640	13,665	6,108							
319	80	5,294	4,493	7,420	41,991	16,510							
32	665	204,154	71,324	180,528	472,960	287,426							
321	57	41,741	17,500	45,927	106,472	67,735							
322	53	27,972	11,567	27,568	92,882	50,699							
323	21	1,088	638	1,496	4,559	2,616							
324	24	52,595	7,321	19,937	60,159	32,902							
325	137	41,407	15,139	36,904	85,993	56,753							
326	30	8,377	6,812	16,209	29,798	23,004							

Detail may not add to total because of rounding.



## 1948 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	18,164	\$4,697,878	1,544,930	\$4,357,488	\$17,053,460	\$7,520,203							
20	3,892	490,889	119,748	286,166	2,225,589	623,102	327	385	\$19,906	5,646	\$13,725	\$42,946	\$22,339
201	224	27,423	12,117	33,990	397,351	54,804	329	75	16,741	7,694	23,881	65,349	38,947
202	583	48,421	8,254	19,277	140,757	44,105							
203	119	-	15,487	-	-	-	33	868	1,422,115	274,155	906,683	3,412,858	1,349,213
204	393	19,709	3,072	7,238	109,872	15,152	331	291	1,174,085	185,870	627,638	2,357,453	869,075
205	1,392	74,552	36,426	92,138	354,370	164,091	332	182	77,200	32,744	102,174	287,942	161,592
206	2	-	2,522	-	-	-	333	35	35,917	8,835	29,074	200,094	64,815
207	245	42,912	17,194	36,446	325,971	89,019	334	16	10,914	2,801	9,328	64,939	36,947
208	543	174,092	17,741	53,841	492,753	147,725	336	116	29,400	10,288	32,621	124,534	45,771
209	391	36,824	6,935	14,991	168,172	43,407	339	228	94,599	33,617	105,848	377,896	171,013
21	211	23,729	19,919	33,262	161,302	76,442	34	1,052	380,072	138,069	420,988	1,487,037	748,770
211	174	14,049	18,704	30,939	147,884	71,558	342	259	78,119	27,190	78,128	195,570	121,711
212	9	973	277	758	7,395	1,831	343	48	16,771	6,157	17,636	51,642	23,936
213	20	1,586	281	393	3,738	1,395	344	358	139,442	46,558	145,224	590,692	275,012
214	8	7,121	657	1,172	2,285	1,658	345	21	23,466	9,113	27,302	77,764	39,775
22	1,221	327,867	146,488	382,729	1,289,815	622,153	346	39	13,530	6,318	16,009	60,631	28,384
221	64	10,339	4,093	11,074	47,072	18,290	347	81	3,689	2,380	6,479	16,373	10,245
222	144	33,223	21,371	54,619	193,515	90,134	348	101	39,464	15,529	48,172	207,546	92,430
223	110	45,739	18,631	51,253	217,838	78,666	349	145	65,591	24,824	82,038	286,819	157,275
224	52	5,655	3,703	9,001	29,755	13,365	35	1,101	245,458	97,370	319,071	984,821	558,138
225	452	82,960	40,260	101,092	265,253	154,966	351	7	3,879	3,079	9,917	22,771	12,498
226	156	23,451	14,011	34,974	96,478	56,469	352	25	12,429	2,495	7,981	35,059	12,245
227	62	18,976	9,125	25,811	105,437	43,864	353	51	13,893	5,476	16,595	64,480	33,748
228	94	61,470	21,247	53,862	162,668	94,492	354	235	16,039	8,736	28,195	81,865	54,030
229	87	46,054	14,047	41,043	171,799	71,907	355	407	170,006	66,278	223,921	688,836	395,308
23	2,253	117,694	180,142	317,432	964,239	479,453	356	49	13,427	5,402	15,923	42,204	22,728
231	514	23,781	40,637	89,929	261,256	132,354	357	5	-	214	-	-	-
232	358	32,330	46,278	76,531	242,551	108,237	358	2	-	172	-	-	-
233	789	23,397	61,492	92,413	256,628	147,427	359	320	15,181	5,518	15,559	46,834	26,094
234	19	2,172	2,830	4,919	10,845	7,033	36	295	191,852	125,416	395,465	1,272,092	688,561
235	64	12,426	6,435	14,899	39,534	20,245	363	12	23,466	15,697	47,081	213,821	100,749
237	87	1,191	819	2,168	7,078	3,531	364	47	5,557	3,763	8,976	28,879	15,861
238	96	8,114	10,617	16,541	52,273	24,352	365	49	32,633	26,529	67,707	247,974	102,451
239	326	14,283	11,034	20,032	94,074	36,274	369	187	130,196	79,427	271,701	781,418	469,491
24	1,408	51,938	24,143	52,516	171,198	79,527	37	180	270,159	80,328	272,559	1,073,588	456,249
242	1,124	28,915	12,657	25,148	74,303	37,972	371	100	67,525	26,563	97,875	405,997	162,801
243	30	2,219	891	2,193	13,904	3,187	372	9	9,630	2,587	8,418	16,153	9,884
244	53	4,632	1,916	3,997	14,119	6,391	373	15	23,842	6,716	23,952	23,226	14,991
249	201	16,172	8,679	21,178	68,872	31,977	374	46	168,911	44,347	142,023	627,765	268,231
25	524	28,828	19,004	44,238	140,304	70,974	379	10	251	115	291	447	331
251	469	27,866	17,870	42,196	131,409	67,795	38	330	35,731	22,383	64,197	171,335	111,921
259	55	962	1,134	2,042	8,895	3,179	381	65	17,222	9,295	29,408	70,316	46,181
26	383	147,416	39,677	115,630	481,072	211,435	382	7	4,466	2,932	9,730	31,086	17,721
261	-	-	-	-	-	-	383	95	5,894	2,663	6,272	15,735	9,521
264	194	107,784	23,952	73,602	296,389	131,407	384	148	4,806	3,818	9,168	23,331	19,321
265	183	37,437	15,063	39,998	176,437	76,066	386	11	1,301	439	1,239	10,152	6,121
266	6	2,195	662	2,030	8,246	3,962	387	4	2,042	3,236	8,380	20,715	13,051
27	1,786	174,604	54,939	175,058	464,199	299,020	39	681	50,074	27,599	69,174	220,064	114,841
271	1,594	162,819	48,886	157,119	430,728	273,285	391	89	2,307	1,201	2,696	6,953	3,961
278	85	3,146	2,255	4,152	10,017	7,308	393	14	3,651	833	2,330	7,308	3,841
279	107	8,639	3,798	13,787	23,454	18,427	394	89	6,235	6,624	13,798	42,144	23,991
28	628	207,581	35,595	111,383	674,822	308,575	395	33	3,128	1,554	4,499	11,502	5,971
281	22	51,076	6,171	20,092	126,816	49,124	396	21	7,074	4,792	13,207	35,823	23,811
283	95	21,821	5,565	16,105	112,343	76,555	398-99	435	27,679	12,595	32,644	116,334	53,251
284	129	17,965	2,356	6,537	57,048	22,869							
285	98	29,578	5,802	19,005	119,535	44,035							
286	9	1,301	542	839	2,055	1,022							
287	25	5,769	959	2,762	12,724	3,657							
289	250	80,071	14,200	46,043	244,301	111,313							
29	131	223,969	18,781	74,479	832,776	197,654							
291	21	173,571	11,777	51,221	558,077	122,375							
295	32	2,912	535	1,171	8,534	3,349							
299	78	47,486	6,469	22,087	266,165	71,930							
30	107	40,492	15,788	46,834	189,431	89,152							
301	6	22,932	7,258	24,389	115,395	47,985							
306	52	13,290	6,409	17,616	51,221	28,779							
307	49	4,270	2,121	4,829	22,815	12,388							
31	314	43,605	34,043	68,892	311,375	111,663							
311	46	22,848	8,551	23,089	139,717	35,484							
312	12	596	165	491	1,704	644							
314	108	12,180	18,156	32,270	115,158	51,794							
315	5	597	180	364	1,024	540							
316	50	1,411	1,858	3,996	13,082	5,958							
319	93	5,973	5,133	8,682	40,690	17,243							
32	799	223,805	71,343	200,732	525,543	323,356							
321	65	45,075	16,683	49,790	122,442	81,642							
322	52	29,040	10,831	27,300	80,743	43,832							
323	22	1,227	646	1,567	4,983	2,966							
324	25	57,133	7,526	23,481	79,362	43,102							
325	141	45,166	15,588	42,891	95,773	63,355							
326	34	9,517	6,729	18,097	33,945	27,173							

Detail may not add to total because of rounding.

1949 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS  
(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	18,119	\$4,859,525	1,439,082	\$4,044,525	\$15,808,454	\$7,013,024							
20	3,786	499,008	118,330	294,342	2,079,226	625,300	329	88	\$19,092	7,038	\$21,876	\$59,838	\$37,156
201	238	28,934	12,619	36,460	371,557	57,388							
202	547	44,199	8,571	20,445	132,588	48,157	33	717	1,274,346	198,059	642,637	2,590,798	984,651
203	124	-	15,935	-	-	-	331	101	1,020,628	128,495	423,290	1,597,734	574,989
204	386	19,462	3,238	8,040	104,545	16,462	332	181	72,915	24,944	76,828	216,858	123,535
205	1,359	76,565	35,471	94,087	341,718	170,013	333	37	38,232	7,523	24,445	220,403	78,784
206	2	-	2,839	-	-	-	335	51	20,362	4,440	12,000	37,659	19,845
207	253	46,113	17,557	37,424	273,513	92,458	336	117	29,655	8,133	25,808	93,145	36,986
208	527	179,734	16,695	54,226	482,424	139,566	339	230	92,554	24,524	80,266	424,999	150,512
209	350	33,971	5,405	12,691	129,085	34,639							
21	199	24,682	18,509	30,241	150,647	69,649	34	1,227	562,021	158,696	501,474	1,808,231	859,672
211	1	-	191	-	-	-	342	268	77,450	23,236	66,418	156,739	98,797
212	172	14,309	17,623	28,397	138,703	65,428	343	92	28,264	11,798	32,226	93,837	52,533
213	18	1,082	168	304	3,549	1,366	344	566	189,796	57,479	186,740	768,849	365,464
214	8	-	527	-	-	-	345	22	25,633	7,446	22,696	78,369	35,880
							346	39	11,493	4,476	10,804	46,001	16,802
							347	82	4,054	1,873	5,005	13,713	8,007
22	1,221	318,344	129,914	318,183	977,635	478,922	348	100	38,633	14,930	43,502	235,865	114,238
221	52	8,753	2,960	6,897	30,878	12,525	349	58	186,698	37,458	134,083	414,858	167,951
222	145	39,537	19,448	46,198	155,238	70,248	35	1,203	272,899	98,943	327,960	1,056,851	612,689
223	55	21,990	7,667	21,361	70,564	28,459	351	7	4,116	2,808	10,096	19,759	10,532
224	55	6,312	3,764	8,504	26,862	12,384	352	27	7,235	2,537	7,228	30,602	14,179
225	486	94,745	42,844	100,525	246,105	143,594	353	52	14,600	4,369	15,100	55,244	29,985
226	160	26,120	13,713	34,301	87,128	53,498	354	197	15,137	6,689	21,500	58,217	39,854
227	60	21,794	7,937	22,010	89,244	34,890	355	406	177,922	61,177	210,198	632,360	381,679
228	133	83,529	26,229	65,720	209,726	102,387	356	147	14,278	5,436	16,123	41,447	26,187
229	75	15,564	5,352	12,667	61,890	20,937	357	5	363	179	419	742	502
23	2,267	137,401	187,469	324,125	1,085,878	485,639	358	14	24,417	10,846	32,994	175,677	86,392
232	852	59,366	88,077	158,814	456,881	225,321	359	348	14,831	4,902	14,302	42,803	23,379
233	803	25,813	64,325	99,639	332,453	152,493	36	293	199,646	106,067	341,132	1,090,811	585,523
234	68	5,138	8,802	13,274	37,465	20,539	363	37	5,410	2,723	6,544	26,771	12,779
235	64	12,510	5,875	13,340	36,079	20,218	364	9	2,588	1,595	4,198	9,811	6,629
237	86	1,395	785	1,956	6,040	2,843	365	49	38,357	26,621	73,144	281,949	123,860
238	34	3,285	2,448	3,937	17,298	9,323	369	198	153,291	75,128	257,246	772,280	442,255
239	360	29,894	17,157	33,166	199,662	54,902							
24	1,391	55,405	22,548	50,020	160,061	78,410	37	136	268,377	74,851	251,831	1,009,047	424,865
242	1,074	28,919	11,614	23,405	64,381	33,650	371	58	60,205	25,251	89,483	388,514	151,676
244	74	5,622	2,190	4,864	19,391	8,004	372	8	8,914	2,376	7,688	15,465	10,570
249	243	20,864	8,744	21,751	76,289	36,756	373	15	24,971	8,614	28,320	73,157	29,429
							374	45	174,036	38,510	126,109	531,556	232,924
							379	10	251	100	231	355	266
25	523	30,768	18,204	42,607	130,403	65,325							
251	466	29,675	17,003	40,520	120,717	61,891	38	328	38,211	20,894	61,791	159,311	103,691
259	57	1,093	1,201	2,087	9,686	3,434	381	62	17,758	8,936	28,532	61,724	41,229
26	391	155,932	38,782	112,712	440,870	222,424	382	7	4,885	2,548	8,618	28,545	17,711
262	19	58,376	8,332	25,400	87,026	43,873	383	94	5,996	2,320	6,150	15,618	9,426
263	16	8,345	1,119	3,742	13,414	7,336	384	148	5,386	3,381	8,025	18,819	15,128
264	196	59,656	17,519	51,989	220,945	104,257	385	2	-	156	-	-	-
265	160	29,555	11,812	31,581	119,485	66,958	386	10	1,292	305	947	13,568	6,319
							387	5	-	3,248	-	-	-
27	1,798	187,416	54,693	183,317	474,330	307,721	39	532	64,496	27,115	71,628	239,453	128,472
271	1,605	176,040	49,296	165,319	443,650	283,623	391	87	2,269	1,029	2,387	5,852	3,339
278	86	2,518	1,866	4,017	7,918	5,782	393	17	3,793	714	1,971	5,680	3,003
279	107	8,858	3,531	13,981	22,762	18,316	394	86	7,018	6,430	13,788	40,927	22,872
							395	35	3,401	1,550	4,451	11,898	6,403
28	609	185,853	30,260	97,566	544,619	264,360	396	21	6,872	4,228	11,719	28,390	18,098
281	25	30,667	2,039	7,150	53,070	24,303	398-99	286	41,143	13,164	37,312	146,706	74,757
283	96	23,029	5,829	18,423	115,579	79,868							
284	122	17,469	2,516	7,150	47,086	22,400							
285	99	29,772	5,632	19,026	104,618	42,050							
286	8	1,195	344	502	1,103	591							
287	26	5,589	1,032	2,925	14,168	4,174							
289	233	78,132	12,868	42,390	208,995	90,974							
29	135	253,223	20,578	81,536	798,821	182,013							
291	37	217,455	14,860	62,214	574,260	123,905							
295	33	3,462	543	1,299	8,667	3,352							
299	65	32,306	5,175	18,023	215,894	54,756							
30	118	44,123	15,372	47,092	180,381	91,553							
301	6	23,187	6,164	20,895	98,130	43,905							
306	55	14,806	6,606	19,500	55,525	32,910							
307	57	6,130	2,602	6,697	26,726	14,738							
31	304	44,037	33,840	67,999	304,369	115,409							
311	45	22,348	8,087	21,263	115,102	28,364							
312	12	795	154	445	1,225	507							
314	109	12,686	19,126	34,290	133,440	61,514							
315	4	300	170	331	835	401							
316	45	1,423	1,524	3,266	10,660	5,037							
319	89	6,485	4,779	8,404	43,107	19,586							
32	941	243,337	65,958	197,331	526,712	326,736							
321	8	17,673	4,062	22,932	19,956	14,017							
322	26	27,965	9,502	25,084	75,452	42,988							
323	103	29,958	11,156	32,424	97,608	64,414							
325	139	45,491	14,283	37,630	83,168	56,303							
326	21	9,409	6,000	16,413	28,636	22,998							
327	411	90,743	12,934	38,307	154,291	84,523							
328	145	3,006	983	2,665	7,763	4,337							

Detail may not add to total because of rounding.



1950 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	17,425	\$5,318,393	1,488,009	\$4,399,946	\$18,078,100	\$8,136,643							
20	3,659	518,815	123,939	305,881	2,214,218	662,549	329	73	\$22,572	8,009	\$25,476	\$76,791	\$47,712
201	225	32,263	12,760	38,583	391,208	61,630							
202	527	40,140	8,140	20,400	131,380	47,098	33	846	1,573,285	254,313	891,531	3,821,811	1,560,730
203	122	-	17,012	-	-	-	331	295	1,299,355	169,465	614,823	2,859,025	1,110,978
204	383	20,170	3,240	8,429	104,804	16,188	332	178	112,554	40,619	129,318	255,583	146,621
205	1,306	79,940	40,696	97,821	351,070	179,243	333	34	45,500	7,652	26,666	204,264	72,576
206	2	-	2,925	-	-	-	334	17	1,844	3,098	9,655	73,795	37,088
207	235	46,182	17,023	38,355	270,377	96,291	336	113	30,058	9,803	31,373	129,726	50,190
208	512	192,215	16,831	54,619	542,652	159,253	339	209	83,974	23,676	79,696	299,418	143,277
209	347	33,189	5,312	12,916	163,364	34,601							
							34	1,078	411,254	131,658	414,016	1,578,848	770,975
21	176	23,112	15,725	29,089	140,781	66,218	342	267	84,149	26,556	78,595	214,524	124,975
211	143	13,061	14,948	27,297	130,075	62,837	343	43	12,586	5,221	14,733	67,114	33,304
212	7	974	212	642	5,456	1,282	344	385	153,936	44,604	143,873	619,034	273,902
213	18	1,110	157	335	3,277	1,006	345	22	27,146	8,452	26,691	73,717	37,101
214	8	7,967	408	815	1,973	1,093	346	38	13,898	5,163	13,272	53,901	21,947
							347	85	4,369	2,182	5,891	17,601	10,943
22	1,204	373,047	143,507	376,046	1,322,472	620,796	348	98	43,711	15,634	51,834	248,917	117,274
221	55	9,872	3,838	10,760	47,115	18,040	349	140	71,459	23,846	79,127	284,040	151,529
222	143	43,344	19,461	49,981	183,893	79,509							
223	102	42,364	16,463	47,166	229,729	71,416	35	1,057	291,243	90,351	308,796	909,882	529,516
224	53	6,015	4,191	9,729	34,921	14,496	351	7	4,511	2,758	9,726	20,158	11,709
225	471	99,409	43,009	104,121	270,538	146,819	352	26	7,314	2,530	7,589	32,544	15,233
226	151	27,079	13,827	35,833	96,409	57,872	353	50	15,829	4,868	16,704	54,417	28,961
227	53	26,037	8,598	26,887	137,091	54,035	354	222	16,233	7,630	26,563	73,732	49,228
228	88	62,401	20,424	51,631	164,151	99,437	355	395	217,678	62,695	218,974	637,362	374,478
229	88	56,526	13,696	39,938	158,625	79,172	356	48	14,531	4,965	14,971	41,928	23,155
							357	5	-	194	-	-	-
23	2,149	122,670	180,155	342,842	1,016,084	523,355	358	2	-	157	-	-	-
231	470	25,954	40,700	96,601	266,318	136,030	359	302	14,604	4,554	13,403	47,390	25,434
232	296	29,841	39,766	70,732	231,160	99,671							
233	774	25,848	63,667	107,018	272,241	174,164	36	305	237,570	125,011	417,039	1,526,220	848,961
234	72	5,524	8,736	14,281	42,349	22,360	363	16	25,459	12,015	43,964	522,042	121,957
235	65	12,611	5,818	13,672	35,803	21,607	364	45	6,653	3,908	10,118	44,919	21,136
237	83	1,177	814	1,943	6,549	3,319	365	52	41,230	34,188	100,563	404,988	211,746
238	85	6,069	9,642	16,576	55,910	27,058	369	192	164,228	74,900	262,394	824,271	494,122
239	304	15,646	11,012	22,019	105,754	39,146							
							37	171	279,339	65,297	234,386	1,007,718	422,205
24	1,265	120,462	20,378	45,868	182,861	89,596	371	96	70,676	29,193	108,276	533,125	196,128
242	1,006	29,971	11,487	24,599	90,999	48,832	372	8	11,546	3,736	11,936	27,846	13,752
243	24	1,856	641	1,782	13,491	2,901	373	15	25,695	3,800	13,742	31,648	16,922
244	44	3,420	1,518	3,430	12,003	5,412	374	42	171,175	28,478	100,251	414,709	195,209
249	191	85,215	6,732	16,057	66,368	32,451	379	10	247	90	181	390	194
25	510	41,801	23,852	62,019	218,289	110,461	38	328	41,068	21,240	65,527	188,215	120,873
251	457	40,846	22,410	59,737	208,035	106,590	381	60	19,600	9,828	33,096	83,575	54,470
259	53	955	1,442	2,282	10,254	3,871	382	7	4,508	2,507	8,743	30,330	18,626
							383	95	6,384	2,568	6,532	17,477	10,018
26	382	173,062	40,677	127,794	568,512	256,327	384	151	5,950	3,339	8,576	21,501	17,691
261	-	-	-	-	-	-	386	10	1,461	274	918	15,601	7,725
264	198	127,082	23,943	79,340	331,977	163,301	387	5	3,165	2,724	7,662	19,731	12,343
265	180	43,886	16,259	47,019	198,380	89,640							
266	4	2,094	475	1,435	8,155	3,386	39	644	52,294	27,742	69,724	234,577	114,206
							391	85	2,566	1,126	2,604	6,491	3,658
27	1,764	296,086	54,624	191,748	494,436	319,678	393	17	3,920	865	2,355	7,901	4,206
271	1,580	285,259	49,267	172,852	463,393	295,732	394	84	10,735	8,191	17,425	51,696	27,952
278	81	2,372	1,849	4,290	8,846	6,249	395	34	3,638	1,626	5,088	14,087	8,202
279	103	8,455	3,508	14,606	22,197	17,697	396	21	6,970	4,286	12,045	28,276	16,500
							398-99	403	24,465	11,648	30,207	26,126	53,688
28	598	192,543	34,294	119,782	762,503	356,614							
281	20	19,910	4,044	16,969	131,512	49,615							
283	93	24,798	5,988	20,278	132,223	90,587							
284	123	19,544	2,561	7,571	57,176	24,650							
285	96	31,075	5,932	21,355	130,086	50,703							
286	7	1,048	196	379	1,262	593							
287	24	6,659	1,009	2,909	13,674	3,713							
289	235	89,509	14,564	50,321	286,570	136,753							
29	120	239,866	17,413	69,850	810,806	172,188							
291	20	188,245	11,120	47,703	542,907	102,367							
295	34	4,029	615	1,450	11,092	4,677							
299	66	47,592	5,678	20,697	256,807	65,144							
30	108	41,789	14,774	48,473	214,756	108,296							
301	5	21,177	5,253	20,974	117,494	52,763							
306	50	14,324	6,499	19,331	60,158	35,305							
307	53	6,288	3,022	8,168	37,104	20,228							
31	294	46,711	34,479	74,714	326,332	124,127							
311	43	22,421	8,127	22,402	128,272	34,528							
312	12	483	168	513	1,702	730							
314	109	15,478	19,867	38,997	142,788	65,709							
315	4	299	165	338	897	472							
316	41	1,170	1,452	3,365	10,423	5,042							
319	85	6,860	4,700	9,099	42,250	17,646							
32	767	242,376	68,580	204,821	568,779	358,972							
321	64	46,947	15,302	49,079	133,575	88,621							
322	51	29,954	10,654	28,342	82,997	46,201							
323	20	1,263	566	1,594	6,758	3,782							
324	25	61,349	7,611	25,282	89,762	52,344							
325	140	48,233	15,294	43,575	100,229	69,691							
326	35	9,909	5,773	16,526	30,959	24,226							
327	359	22,149	5,371	14,947	47,708	26,395							

Detail may not add to total because of rounding.



## 1951 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	18,584	\$5,681,339	1,577,704	\$5,236,732	\$21,561,190	\$9,413,099							
20	3,693	537,914	121,242	329,513	2,393,730	685,511	329	77	\$23,533	8,573	\$32,200	\$96,888	\$57,711
201	245	34,546	13,540	44,181	482,742	70,893							
202	521	42,076	8,057	21,869	149,665	51,935	33	940	1,761,269	264,846	1,078,691	4,866,270	1,877,569
203	123	-	16,565	-	-	-	331	353	1,483,916	182,382	759,621	3,482,330	1,252,684
204	385	23,732	3,797	11,907	131,024	23,659	332	186	83,402	31,967	120,616	387,726	218,297
205	1,295	84,710	36,960	104,719	389,061	193,324	333	33	50,943	7,780	31,895	271,546	89,044
206	2	-	2,833	-	-	-	334	17	12,604	3,903	16,319	105,859	50,175
207	269	47,313	17,478	40,338	300,699	97,613	336	122	30,193	10,535	38,949	180,685	68,606
208	510	198,468	16,564	57,648	509,513	147,000	339	229	100,211	28,279	111,291	438,124	198,763
209	343	30,096	5,448	14,099	167,536	37,215							
							34	1,142	505,681	160,038	594,286	2,068,801	1,004,393
21	169	21,923	15,839	27,352	147,280	70,487	342	286	97,208	29,008	101,920	267,790	162,778
211	1	-	168	-	-	-	343	45	10,646	5,028	17,855	66,949	31,811
212	142	13,864	15,120	25,460	135,619	66,373	344	388	229,029	64,398	248,978	801,156	349,793
213	17	1,084	175	374	3,309	1,046	345	24	26,506	8,994	33,233	106,435	57,839
214	9	-	376	-	-	-	346	35	13,022	4,716	14,371	63,653	27,834
							347	104	5,012	2,440	7,575	23,938	14,840
22	1,272	383,268	132,077	368,991	1,320,652	600,437	348	109	46,425	17,143	63,319	313,226	138,108
221	58	11,725	3,916	11,230	53,610	22,163	349	151	77,835	28,311	107,035	425,614	221,386
222	150	46,814	18,905	49,539	183,435	74,934							
223	92	43,060	13,117	39,954	200,755	59,921	35	1,139	304,608	105,777	415,729	1,287,269	709,507
224	58	6,811	4,016	9,944	57,938	21,699	351	8	8,264	3,548	13,056	36,797	18,202
225	525	104,876	40,021	104,646	272,776	147,678	352	23	20,472	3,851	15,648	95,074	40,077
226	162	25,911	12,374	33,728	95,838	55,416	353	50	18,312	5,623	21,264	95,954	48,183
227	54	28,224	7,688	23,817	124,389	47,105	354	258	18,700	9,409	36,753	137,022	79,985
228	87	59,348	19,234	55,989	169,031	97,099	355	410	203,569	71,282	288,778	781,104	447,196
229	86	56,499	12,806	40,144	162,880	74,422	356	47	18,220	5,608	19,442	56,064	31,074
							357	5	-	185	-	-	-
23	2,342	137,454	188,097	369,546	1,101,347	551,806	358	2	-	108	-	-	-
231	483	27,180	42,047	102,267	274,226	140,927	359	336	16,375	6,163	19,890	82,122	43,133
232	293	29,785	36,765	66,386	225,554	100,688							
233	905	35,754	70,711	123,915	316,941	184,003	36	334	268,443	139,057	505,724	1,786,610	981,672
234	87	6,378	9,498	15,890	44,530	21,529	363	18	30,902	12,491	41,675	223,384	108,862
235	63	12,903	5,811	13,704	36,257	21,351	364	50	7,039	4,123	11,510	42,875	21,696
237	81	1,274	824	2,354	8,627	4,362	365	59	48,222	36,091	115,502	412,929	209,557
238	90	6,784	10,615	18,568	59,347	28,670	369	207	182,280	86,352	337,037	1,107,422	641,557
239	340	17,396	11,826	26,462	135,865	50,276							
							37	184	268,656	77,953	312,725	1,243,870	477,353
24	1,482	53,628	21,598	52,224	180,806	82,604	371	104	94,946	29,275	124,947	612,404	205,572
242	1,183	30,810	12,099	26,890	79,829	40,052	372	14	8,163	5,644	20,342	58,053	30,236
243	24	1,887	650	2,215	14,849	3,456	373	15	26,838	5,054	18,077	30,286	16,150
244	51	3,724	1,626	4,052	13,913	5,841	374	42	138,485	37,911	149,211	542,863	225,245
249	224	17,207	7,223	19,067	72,215	33,255	379	9	224	69	148	264	150
25	563	47,015	23,558	64,663	203,409	99,917	38	361	53,949	24,948	88,442	227,210	147,115
251	501	45,683	22,086	62,219	192,589	95,827	381	68	30,204	12,119	48,995	119,028	77,850
259	62	1,332	1,472	2,444	10,820	4,090	382	7	4,745	2,986	11,420	40,080	23,334
							383	101	7,474	2,832	7,693	20,402	11,339
26	416	187,353	41,361	144,354	683,722	309,402	384	166	6,114	3,606	9,517	25,304	20,791
261	-	-	-	-	132	82	386	13	1,547	413	1,348	4,530	3,474
264	222	137,993	25,471	92,180	422,125	195,056	387	6	3,865	2,992	9,469	17,866	10,327
265	189	45,874	15,235	50,205	250,586	109,882							
266	5	3,486	655	1,969	10,879	4,382	39	702	55,654	26,614	74,965	269,631	126,650
							391	93	3,304	1,042	2,604	7,736	4,292
27	1,822	211,346	55,184	203,336	549,464	363,653	393	16	4,302	727	2,227	6,809	3,680
271	1,626	199,547	49,593	183,648	512,390	335,834	394	94	9,655	7,607	18,258	60,480	31,453
278	82	2,538	1,883	4,544	9,538	6,738	395	31	3,939	1,579	5,797	13,044	9,055
279	114	9,261	3,708	15,144	27,536	21,081	396	20	6,582	3,220	11,409	28,645	16,993
							398-99	448	27,872	12,439	34,670	152,917	61,177
28	626	265,254	38,316	144,050	974,695	436,734							
281	21	47,473	4,926	20,341	180,738	60,067							
283	97	28,911	6,146	21,426	153,094	105,010							
284	127	19,410	2,472	8,078	56,691	23,108							
285	98	32,526	6,260	24,661	150,866	56,010							
286	7	1,412	210	470	1,645	755							
287	25	7,043	1,038	3,146	14,700	4,219							
289	251	128,479	17,264	65,928	416,961	187,565							
29	124	251,917	17,672	77,378	944,337	207,326							
291	20	195,489	11,089	51,849	649,032	132,070							
295	37	4,372	621	1,742	12,354	5,603							
299	67	52,056	5,962	23,787	282,951	69,653							
30	138	58,642	17,812	64,349	316,421	144,786							
301	5	27,167	5,615	24,447	152,090	60,242							
306	57	17,657	7,101	24,210	106,742	54,088							
307	76	13,818	5,096	15,692	57,589	30,456							
31	300	40,862	33,224	74,806	319,963	114,842							
311	41	19,868	7,381	21,661	130,388	31,630							
312	11	487	159	528	2,302	909							
314	114	14,626	19,769	41,684	145,103	64,403							
315	4	300	177	410	1,010	467							
316	42	1,199	1,384	2,885	9,808	4,347							
319	88	4,382	4,354	7,638	31,352	13,086							
32	835	266,503	72,491	245,608	675,703	421,335							
321	67	57,011	15,715	57,123	152,111	100,817							
322	55	33,651	11,404	33,732	100,756	55,415							
323	23	1,447	598	1,784	7,998	4,308							
324	25	65,646	7,787	27,946	102,538	61,121							
325	138	50,071	16,263	55,669	127,896	87,151							
326	47	10,118	5,544	18,119	30,858	24,259							
327	403	25,026	6,607	19,035	56,658	30,553							

Detail may not add to total because of rounding.

## 1952 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	18,339	\$6,170,001	1,585,843	\$5,443,881	\$20,985,354	\$9,466,602							
20	3,587	541,663	119,578	340,496	2,355,664	684,549	329	81	\$31,330	8,726	\$33,489	\$122,518	\$76,34
201	247	33,208	13,894	48,836	462,283	73,586							
202	496	42,334	8,181	23,666	157,869	54,495	33	946	1,973,153	264,534	1,082,104	4,550,649	1,772,18
203	125	-	16,142	-	-	-	331	348	1,675,912	180,192	739,418	3,119,336	1,108,98
204	379	20,913	3,285	9,627	124,564	18,800	332	185	86,012	31,864	126,244	382,820	221,05
205	1,255	93,895	36,692	109,537	404,939	205,186	333	35	47,751	7,584	32,388	243,499	80,44
206	2	-	2,693	-	-	-	334	17	13,779	4,067	17,036	89,310	45,24
207	256	47,085	17,484	42,326	301,535	97,045	336	117	33,266	9,947	39,176	185,091	72,98
208	498	192,793	15,895	57,287	468,666	130,852	339	244	116,433	30,880	127,842	530,593	243,47
209	329	29,933	5,312	14,351	160,289	35,354							
21	158	23,286	16,895	36,353	170,733	82,651	34	1,184	561,282	163,371	613,198	1,952,786	974,51
211	1	-	144	-	-	-	342	294	101,517	28,499	101,195	244,367	146,84
212	132	15,509	16,279	34,590	160,230	70,192	343	41	12,637	4,830	16,736	61,657	30,72
213	15	1,111	152	376	3,408	916	344	425	264,204	69,170	267,576	769,384	359,44
214	10	-	320	-	-	-	345	23	25,453	8,618	31,644	96,679	52,50
							346	35	16,316	4,221	14,094	54,920	25,11
22	1,198	371,738	122,784	349,914	1,184,582	544,687	347	103	5,235	2,212	7,650	22,066	13,72
221	46	9,570	3,087	9,050	38,053	14,424	348	115	51,404	17,226	62,030	288,647	126,33
222	144	45,026	17,503	49,001	193,155	77,126	349	148	84,516	28,595	112,273	415,066	219,82
223	87	42,368	12,334	38,668	172,006	54,024	35	1,186	344,471	109,863	458,010	1,396,574	788,96
224	59	6,815	3,930	9,792	31,795	13,612	351	8	12,795	7,538	30,158	76,873	37,20
225	503	100,502	37,880	96,864	256,342	129,705	352	22	20,552	4,376	17,930	95,320	39,36
226	157	26,186	11,566	32,200	93,787	55,227	353	52	20,161	5,772	23,223	99,492	53,02
227	50	28,941	8,164	27,121	118,730	48,684	354	273	20,716	8,193	34,164	120,367	82,74
228	82	59,180	16,457	48,034	144,534	81,422	355	429	217,206	71,132	306,232	855,080	490,68
229	70	53,150	11,863	39,184	136,180	70,463	356	48	19,437	5,912	22,297	60,294	35,27
							357	5	-	180	-	-	-
23	2,357	134,136	186,756	379,592	1,094,796	563,971	358	2	-	165	-	-	-
231	468	26,547	41,096	98,084	261,832	133,610	359	347	33,018	6,595	22,977	85,042	48,85
232	289	30,155	35,829	68,795	220,750	103,876							
233	903	31,282	69,126	130,387	320,538	190,931	36	348	303,636	144,430	559,380	1,891,505	1,062,41
234	90	6,187	10,082	17,588	53,127	25,795	363	17	22,213	8,255	33,166	139,331	74,43
235	62	12,383	5,267	13,955	36,122	21,889	364	51	7,245	3,873	11,769	39,482	20,60
237	78	1,315	769	2,297	6,647	3,514	365	70	70,004	44,214	145,465	508,862	269,76
238	86	6,427	9,763	17,628	57,637	28,422	369	210	204,174	88,088	368,980	1,203,830	697,60
239	381	19,840	14,824	30,858	138,143	55,934							
24	1,455	53,394	19,733	48,631	165,553	78,767	37	191	297,964	93,008	369,662	1,338,334	555,80
242	1,173	32,443	11,721	26,616	77,860	39,242	371	105	100,491	27,680	117,004	529,328	186,62
243	21	1,377	498	1,531	9,032	2,449	372	20	27,774	18,535	66,890	200,044	105,49
244	49	3,914	1,605	4,206	13,534	5,914	373	18	28,177	7,759	21,326	37,198	21,09
249	212	15,660	5,909	16,278	65,127	31,162	374	39	141,303	38,968	164,314	571,563	242,47
							379	9	219	66	128	201	11
25	559	41,009	22,716	64,501	202,268	101,362	38	362	47,500	27,054	95,370	237,876	157,23
251	495	39,404	21,191	61,765	190,292	96,890	381	70	21,840	14,463	56,011	136,203	91,87
259	64	1,605	1,525	2,736	11,976	4,472	382	7	5,005	2,826	10,971	32,501	18,26
							383	100	7,880	2,926	8,084	22,172	12,42
26	403	193,662	40,309	145,269	618,400	289,896	384	167	7,388	3,399	9,463	24,814	20,46
261	1	-	36	-	-	-	386	13	1,317	455	1,488	5,470	3,70
264	219	141,465	24,407	97,802	396,040	189,574	387	5	4,070	2,985	9,353	16,716	10,50
265	178	47,590	15,294	40,277	211,236	95,346							
266	5	-	572	-	-	-	39	681	57,286	27,556	77,721	245,046	120,29
							391	92	2,617	945	2,633	6,420	3,66
27	1,801	219,655	55,466	217,193	570,079	374,983	393	15	3,948	616	2,125	6,357	3,44
271	1,606	209,838	50,050	196,362	533,919	347,262	394	96	10,826	8,558	21,650	69,618	35,49
278	84	2,691	1,966	5,124	11,216	7,933	395	32	4,395	1,605	5,923	14,922	9,55
279	111	7,126	3,450	15,707	24,944	19,788	396	18	6,378	3,757	10,082	21,327	11,75
							398-99	428	29,122	12,075	35,308	126,402	56,37
28	623	322,394	38,566	150,477	868,460	455,496							
281	20	61,291	4,391	19,093	56,253	51,387							
283	90	40,776	7,151	26,325	154,264	109,136							
284	125	18,868	2,398	8,157	47,853	22,758							
285	96	34,193	6,358	26,168	145,166	54,358							
286	7	1,301	175	465	1,479	638							
287	24	7,719	951	3,127	16,863	5,044							
289	261	158,246	17,142	67,142	446,582	212,175							
29	118	287,012	17,510	81,390	949,781	208,838							
291	18	229,786	11,174	56,461	676,338	137,642							
295	36	4,602	711	1,826	11,780	4,668							
299	64	52,624	5,625	23,103	261,663	66,528							
30	70	66,415	13,684	54,515	249,005	115,628							
301	5	39,982	5,491	25,692	150,017	66,380							
306	56	23,334	7,368	26,062	82,071	44,101							
307	9	3,099	825	2,761	16,917	5,147							
31	295	39,529	33,276	77,748	270,689	114,687							
311	38	17,802	6,566	20,282	83,134	25,541							
312	10	406	125	425	1,147	618							
314	115	15,175	20,722	45,678	147,044	70,676							
315	4	295	151	382	1,006	471							
316	42	1,423	1,483	3,053	9,684	4,298							
319	86	4,428	4,229	7,928	28,674	13,083							
32	817	290,816	68,754	242,357	672,574	419,669							
321	65	58,459	13,977	55,235	148,785	97,554							
322	54	33,946	11,150	35,105	96,856	53,442							
323	22	1,562	610	1,999	7,898	4,452							
324	25	67,590	7,703	29,422	96,945	57,702							
325	135	54,323	15,502	52,749	115,991	78,464							
326	46	10,394	4,637	14,708	25,271	19,585							
327	389	33,212	6,449	19,650	58,310	32,129							

Detail may not add to total because of rounding.



## 1953 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

	Number of establish- ments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establish- ments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	18,227	\$7,028,655	1,628,120	\$6,048,396	\$23,222,029	\$10,485,766							
0	3,489	553,490	120,358	358,049	2,393,664	734,328	329	80	\$32,015	8,911	\$36,813	\$129,089	\$82,878
1	247	34,119	14,252	50,604	440,412	73,975							
2	490	47,699	8,420	25,361	158,422	58,415	33	952	2,594,330	271,752	1,253,638	5,461,579	2,127,991
3	131	-	16,800	-	-	-	331	345	2,246,344	186,746	892,744	3,889,237	1,395,028
4	367	21,343	2,986	9,053	107,072	18,173	332	181	122,639	30,243	127,391	402,099	226,539
5	1,206	95,692	36,733	115,497	412,529	219,136	333	32	46,388	7,211	30,798	252,267	81,045
6	2	-	2,689	-	-	-	334	16	13,878	3,978	18,770	94,360	50,668
7	250	48,492	17,451	43,325	306,796	104,868	336	119	35,437	10,034	42,120	179,723	73,046
8	481	186,029	15,873	61,825	517,100	146,506	339	259	129,644	33,540	141,815	643,893	301,665
9	315	32,716	5,154	15,063	161,017	38,990							
10							34	1,216	595,809	169,436	698,077	2,250,964	1,117,394
11	143	25,875	16,790	36,367	174,794	84,008	342	291	106,234	28,646	107,913	262,868	153,758
12	1	-	171	-	-	-	343	39	12,954	5,352	19,301	68,761	33,213
13	118	16,925	16,089	34,741	165,204	80,632	344	451	272,831	73,093	315,708	927,661	443,369
14	14	1,106	174	417	3,259	1,273	345	23	26,095	7,999	34,077	100,949	52,742
15	10	-	356	-	-	-	346	35	24,876	5,177	15,366	62,107	27,681
16							347	103	6,598	2,417	9,243	26,091	16,777
17	1,135	352,648	116,634	347,906	1,145,205	531,368	348	120	56,091	16,887	67,687	331,099	149,186
18	40	9,156	2,343	7,678	36,506	12,850	349	154	90,130	29,865	128,782	471,428	240,668
19	137	40,574	16,029	46,644	174,475	68,218							
20	81	40,201	11,361	38,826	154,623	52,931	35	1,221	356,189	113,340	497,166	1,500,761	831,181
21	61	8,266	4,288	10,426	33,613	15,232	351	9	13,566	7,698	32,852	56,003	29,936
22	477	98,453	36,530	91,992	251,285	126,223	352	22	26,489	4,042	17,633	82,904	32,474
23	150	25,161	10,636	30,885	86,245	50,482	353	51	20,393	5,870	25,408	114,347	61,503
24	45	30,176	7,801	28,185	114,120	46,395	354	295	23,526	9,070	37,482	139,224	90,991
25	78	52,742	16,097	51,396	142,997	79,308	355	433	234,702	74,336	337,304	925,800	514,414
26	66	47,919	11,549	41,874	151,341	79,729	356	49	17,415	5,027	20,367	65,348	37,308
27							357	5	-	-	-	-	-
28	2,363	147,415	194,447	406,430	1,148,316	598,754	358	2	-	-	-	-	-
29	456	31,569	43,674	108,111	294,270	151,810	359	355	18,959	6,913	24,887	112,866	62,374
30	273	31,254	35,824	74,653	231,016	109,659							
31	923	36,496	75,113	138,334	337,274	201,405	36	372	325,709	149,095	625,807	2,051,901	1,167,624
32	86	5,303	9,600	17,207	53,128	24,813	363	17	16,219	8,794	38,096	182,052	89,478
33	61	12,295	5,192	14,314	34,511	19,817	364	49	8,478	4,237	13,326	45,695	22,962
34	75	1,496	698	2,134	6,011	3,261	365	75	77,173	47,456	175,865	621,235	313,989
35	87	7,491	9,719	18,851	59,002	30,523	369	231	223,839	88,608	398,520	1,202,919	741,195
36	402	21,511	14,627	32,826	133,104	57,466							
37							37	190	294,953	101,847	464,365	1,688,234	700,149
38	1,400	52,606	18,986	49,663	163,068	77,194	371	104	106,370	29,839	150,502	652,431	203,913
39	1,124	31,824	10,872	26,188	79,255	39,083	372	25	23,822	25,729	108,788	305,797	177,693
40	20	1,154	452	1,526	9,326	2,235	373	15	28,325	8,053	36,202	89,471	47,779
41	45	3,835	1,556	4,465	14,829	6,864	374	38	136,228	38,165	168,751	640,332	270,646
42	211	15,793	6,106	17,484	59,658	29,012	379	8	208	61	122	203	118
43													
44	557	45,753	23,389	70,853	208,524	106,579	38	359	49,397	27,264	104,425	251,767	165,446
45	495	43,986	21,812	67,890	197,193	101,961	381	68	22,659	14,816	62,008	142,797	94,055
46	62	1,770	1,577	2,963	11,331	4,618	382	7	5,527	2,734	11,524	31,962	18,584
47							383	103	8,330	2,996	9,178	23,217	13,247
48	413	204,569	42,287	158,872	649,489	308,376	384	162	7,795	3,374	9,891	29,244	24,170
49	1	-	35	-	-	-	386	14	1,420	379	1,445	5,192	3,682
50	229	150,400	25,189	99,533	407,229	200,392	387	5	3,666	2,965	10,379	19,355	11,708
51	179	51,609	16,589	57,344	232,063	103,593							
52	4	-	474	-	-	-	39	696	62,449	29,316	88,644	273,045	133,702
53							391	90	2,373	883	2,422	6,307	3,567
54	1,800	232,558	57,753	232,921	611,861	403,001	393	13	4,121	646	2,351	6,779	3,557
55	1,613	220,080	51,962	210,843	574,427	374,236	394	97	14,197	9,910	25,709	81,273	39,636
56	81	2,784	2,069	5,382	10,660	7,814	395	32	4,540	1,771	6,716	16,580	10,354
57	106	9,694	3,722	16,696	26,774	20,951	396	20	6,562	3,569	12,742	26,664	14,259
58							398-99	444	30,656	12,537	38,704	135,442	62,329
59	627	353,266	38,675	159,100	999,140	478,442							
60	22	74,277	4,226	18,444	137,223	51,386							
61	91	70,126	8,028	30,586	188,183	136,568							
62	125	19,013	2,512	8,680	49,993	22,855							
63	96	34,892	6,487	28,450	159,171	60,602							
64	7	1,215	138	385	1,118	589							
65	30	8,233	1,091	3,765	17,532	5,163							
66	256	145,510	16,193	68,790	445,920	201,279							
67													
68	119	359,411	17,392	83,896	973,035	215,255							
69	17	303,682	11,564	59,264	751,516	150,343							
70	39	5,667	729	1,891	15,084	6,142							
71	63	50,062	5,099	22,741	206,435	58,770							
72													
73	67	75,255	15,064	63,203	252,818	112,693							
74	5	49,028	6,209	29,562	139,392	56,492							
75	54	22,687	8,120	30,965	98,829	51,639							
76	8	3,540	735	2,676	14,597	4,562							
77													
78	289	39,419	34,300	83,109	286,553	124,934							
79	38	17,103	6,935	23,266	101,920	33,102							
80	10	392	121	421	955	492							
81	114	15,914	21,759	48,833	147,531	72,771							
82	4	303	157	352	932	431							
83	42	1,293	1,193	2,592	8,121	3,886							
84	81	4,414	4,135	7,645	27,094	14,252							
85													
86	819	307,554	69,995	265,905	737,311	467,347							
87	67	57,964	15,174	65,365	174,165	118,766							
88	53	33,163	11,765	40,550	110,314	62,700							
89	22	1,271	628	2,055	5,893	2,844							
90	24	77,537	7,665	32,017	109,251	63,491							
91	135	60,627	14,632	53,049	118,386	81,405							
92	47	10,609	4,729	15,151	27,409	21,022							
93	391	34,368	6,491	20,905	62,804	34,241							

Retail may not add to total because of rounding.



## 1954 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	17,838	\$7,356,693	1,477,116	\$5,420,655	\$20,206,012	\$9,493,097							
20	3,386	551,095	116,425	363,079	2,408,965	740,353	327	381	\$35,344	5,973	\$19,894	\$60,618	\$33,382
201	252	36,663	14,128	52,558	434,230	77,518	329	80	31,557	8,247	34,198	122,117	79,154
202	468	50,435	8,151	25,438	149,850	56,909							
203	130	-	16,686	-	-	-	33	910	2,629,034	232,996	1,040,660	4,043,835	1,747,522
204	359	21,196	2,960	9,511	108,568	18,003	331	320	2,203,989	156,977	726,151	2,802,698	1,140,553
205	1,158	97,219	35,965	118,435	417,391	221,982	332	178	125,072	23,441	91,624	271,036	156,803
206	2	-	2,532	-	-	-	333	29	111,917	11,275	49,381	198,037	72,587
207	242	47,617	15,491	40,749	309,349	96,309	334	14	13,235	3,049	13,180	68,350	38,020
208	468	178,159	15,458	63,205	524,785	146,842	336	117	37,793	8,491	34,949	147,499	63,612
209	307	29,833	5,054	15,814	175,614	42,488	339	252	137,028	29,763	125,375	556,215	275,947
21	128	26,166	16,362	34,865	167,372	79,823	34	1,162	605,535	144,852	591,141	1,859,229	971,485
211	98	17,333	15,654	33,179	157,643	76,538	342	288	109,395	24,419	94,925	233,428	141,898
212	7	971	221	721	4,803	1,214	343	38	13,465	4,558	17,213	62,580	30,983
213	15	762	180	455	3,357	1,272	344	397	285,027	61,512	258,238	811,315	409,811
214	8	7,100	307	510	1,569	799	345	23	27,084	6,733	27,577	73,748	39,742
22	1,073	342,326	105,444	300,924	1,029,145	480,726	346	37	25,002	4,383	17,042	73,398	33,036
221	39	9,473	2,150	6,509	26,589	10,091	347	105	7,560	2,111	8,108	21,952	13,779
222	132	39,546	14,932	41,090	159,544	57,745	348	123	54,919	15,125	59,415	243,895	111,989
223	75	40,261	9,336	30,198	130,202	42,657	349	151	83,083	26,011	108,623	338,913	190,247
224	57	7,560	4,091	10,510	33,955	15,737	35	1,215	397,314	104,719	453,924	1,368,348	797,784
225	432	88,523	33,268	79,149	221,107	112,732	351	9	13,880	5,821	22,632	50,360	30,306
226	150	22,583	9,635	25,930	65,315	40,621	352	24	14,956	3,814	16,691	78,182	37,857
227	44	31,308	7,330	25,394	116,612	47,900	353	51	22,774	5,474	23,201	96,450	51,440
228	77	54,170	14,079	43,343	128,067	72,676	354	293	25,662	7,936	34,281	116,908	79,111
229	67	48,902	10,623	38,801	147,754	80,567	355	430	277,682	70,110	312,452	878,962	515,442
23	2,277	137,207	189,097	388,111	1,049,559	576,832	356	47	17,457	4,688	19,165	71,642	39,520
231	408	23,579	39,040	96,368	246,131	139,954	357	5	-	173	-	-	-
232	257	29,591	35,385	71,459	211,335	104,886	358	1	-	78	-	-	-
233	917	34,104	76,747	140,394	327,280	202,273	359	355	24,509	6,625	24,687	73,433	42,988
234	89	7,182	10,552	19,319	61,756	31,312	36	376	317,461	124,075	510,728	1,722,578	985,258
235	60	12,455	4,705	13,148	32,789	19,468	363	17	16,511	6,798	28,751	145,271	62,932
237	73	1,820	552	1,750	5,022	2,651	364	49	8,458	3,886	12,902	50,667	27,230
238	84	7,402	8,783	15,868	45,945	24,484	365	76	66,904	37,221	135,116	420,200	223,937
239	389	21,074	13,333	29,805	119,301	51,804	369	234	225,588	76,170	333,959	1,106,440	671,159
24	1,326	55,839	17,687	47,974	159,798	76,464	37	188	303,678	81,787	396,661	1,202,100	538,085
242	1,057	32,593	9,813	24,540	74,564	35,696	371	102	106,098	24,694	125,369	583,298	209,155
243	18	1,890	529	1,715	10,969	2,369	372	24	23,343	17,721	91,856	189,388	119,616
244	45	3,953	1,358	1,620	11,479	5,581	373	16	28,202	4,498	22,827	57,747	31,465
249	206	17,403	5,987	18,099	62,786	32,818	374	39	145,931	34,838	156,526	371,542	177,775
25	538	45,664	20,175	60,732	190,695	100,374	379	7	104	36	83	125	74
251	480	43,782	19,108	57,533	179,816	96,046	38	353	48,877	23,841	97,288	224,778	150,377
259	58	1,882	1,067	3,199	10,879	4,328	381	69	22,585	12,779	56,438	124,831	85,860
26	419	220,218	40,788	160,901	660,598	313,522	382	7	6,236	2,650	11,627	28,842	15,330
261	1	-	34	-	-	-	383	103	8,954	2,630	8,589	20,748	12,688
264	234	164,166	24,876	103,146	423,523	209,140	384	154	6,351	3,076	9,438	27,431	22,468
265	180	53,324	15,404	55,736	222,934	97,564	386	15	1,294	439	1,519	4,838	3,653
266	4	-	474	-	-	-	387	5	3,457	2,267	9,677	18,088	10,378
27	1,763	393,370	58,982	238,655	605,762	405,089	39	753	68,082	29,311	88,181	281,135	137,591
271	1,580	380,551	53,311	216,439	568,473	376,056	391	88	2,169	746	2,276	5,896	3,330
278	78	3,198	2,124	5,405	10,342	7,835	393	12	4,119	676	2,534	7,583	3,893
279	105	9,621	3,547	16,811	26,947	21,198	394	103	10,893	8,496	21,819	75,806	38,946
28	623	361,763	37,976	161,824	1,019,007	495,167	395	34	5,178	1,772	6,751	13,745	9,095
281	21	82,144	3,820	18,309	128,253	48,787	396	18	6,289	3,426	11,461	24,035	12,968
283	89	63,455	8,224	34,383	211,126	146,659	398-99	498	39,434	14,195	43,340	154,070	69,359
284	121	19,443	2,528	8,645	53,313	23,785							
285	93	35,842	6,331	27,659	157,567	60,376							
286	6	838	128	376	1,189	540							
287	29	7,868	948	3,360	17,582	5,230							
289	264	152,173	15,997	69,092	449,977	209,790							
29	113	399,568	17,545	89,071	968,083	203,524							
291	15	342,315	12,165	65,031	748,538	139,716							
295	37	5,845	688	2,007	16,862	6,934							
299	61	51,408	4,692	22,033	202,683	56,874							
30	153	91,102	17,662	68,649	286,058	133,065							
301	5	53,022	5,855	26,820	123,042	50,825							
306	55	23,354	6,943	26,767	90,015	47,341							
307	93	14,726	4,864	15,062	73,001	34,899							
31	280	41,463	33,754	81,079	272,244	123,108							
311	37	17,263	6,440	20,750	88,491	29,839							
312	8	365	88	299	740	404							
314	116	16,062	21,919	48,788	145,100	73,524							
315	4	292	133	286	778	420							
316	36	1,038	923	2,118	6,938	3,411							
319	79	6,443	4,251	8,838	30,197	15,510							
32	802	320,931	63,638	246,208	686,723	436,948							
321	63	58,663	13,479	59,719	151,444	102,442							
322	53	38,829	11,227	39,496	108,251	61,635							
323	22	1,187	521	1,869	7,432	2,882							
324	24	83,445	7,277	31,008	108,792	64,664							
325	132	62,436	12,135	43,832	97,868	69,361							
326	47	9,470	4,779	16,192	30,201	23,428							

Detail may not add to total because of rounding.

(Money figures in thousands of dollars)

	Number of establish- ments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establish- ments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	17,540	\$7,432,137	1,550,959	\$5,866,261	\$23,008,069	\$10,745,184							
0	3,287	526,533	115,768	363,842	2,330,034	788,087	329	81	\$33,300	9,051	\$38,548	\$142,649	\$91,035
1	248	35,280	14,371	54,541	427,228	84,866							
2	461	48,876	7,616	25,132	163,489	61,779	33	891	2,738,669	254,615	1,264,757	5,446,223	2,286,729
3	125	-	16,441	-	-	-	331	317	2,414,104	184,056	946,582	4,026,160	1,605,946
4	351	22,503	2,904	9,416	96,677	17,645	332	171	86,680	22,370	97,447	325,394	177,463
5	1,119	102,731	36,136	125,008	437,437	235,339	333	28	43,023	6,053	28,301	237,808	94,867
6	2	-	2,330	-	-	-	334	15	14,700	3,553	17,951	107,443	60,633
7	232	47,839	14,534	39,760	299,119	103,163	336	115	39,102	9,189	40,625	198,812	70,015
8	460	178,736	15,874	65,584	537,524	163,534	339	245	141,060	29,394	133,851	550,606	277,805
9	289	29,967	5,562	17,473	177,746	51,104							
1	122	26,440	46,626	34,808	164,449	80,996	34	1,214	622,803	151,205	653,407	2,250,381	1,124,998
1	1	-	157	-	-	-	342	284	104,396	25,220	99,754	283,242	164,882
2	99	19,193	46,066	33,825	159,811	78,630	343	37	13,021	4,870	18,178	64,568	30,795
3	14	746	156	428	3,236	1,532	344	463	274,025	65,125	289,637	929,895	438,370
4	8	-	247	-	-	-	345	24	28,842	6,843	31,977	92,330	48,810
2	1,038	329,117	106,136	313,054	1,143,609	526,886	346	36	26,614	4,550	18,534	78,308	35,333
1	37	6,451	1,813	6,564	31,413	10,726	347	106	7,273	2,336	8,626	52,103	21,619
2	128	36,598	15,270	43,412	175,121	66,569	348	119	58,680	15,727	70,101	318,610	149,001
3	73	36,227	8,430	29,454	132,987	42,733	349	145	109,952	26,534	116,600	431,325	236,188
4	60	8,150	4,512	11,564	36,607	17,689	35	1,193	409,592	100,430	439,140	1,260,836	734,534
5	405	78,335	34,214	81,273	242,243	121,086	351	8	5,983	2,951	12,902	33,123	20,251
6	143	27,878	9,902	28,901	73,363	45,180	352	24	9,573	3,131	15,069	76,540	36,054
7	42	31,442	7,731	27,454	155,152	59,850	353	49	24,324	5,741	25,500	86,191	47,976
8	75	55,904	13,647	43,904	134,033	74,134	354	297	28,024	8,295	33,943	109,523	75,442
9	75	48,132	10,617	40,528	162,690	88,919	355	419	299,670	69,435	308,292	825,526	478,553
3	2,232	137,882	193,018	411,472	1,131,400	606,481	356	47	16,399	4,442	19,296	64,507	37,072
1	383	22,390	38,993	102,169	258,211	141,587	357	6	-	219	-	-	-
2	245	32,647	35,641	74,534	229,364	110,714	358	1	-	37	-	-	-
3	948	35,605	80,397	150,218	365,592	218,442	359	342	25,293	6,179	23,598	64,328	38,464
4	87	6,495	11,430	21,373	67,410	31,851	36	379	352,442	122,227	514,944	1,625,037	940,748
6	56	12,418	4,821	13,722	35,636	21,432	363	16	5,672	1,806	7,156	39,320	17,417
7	70	1,462	652	2,052	5,921	3,039	364	50	13,653	4,503	15,131	65,266	34,469
8	75	6,519	9,176	17,507	46,221	24,963	365	76	88,204	37,858	152,883	467,268	247,220
9	368	20,346	11,908	29,897	123,045	54,453	366	47	16,399	4,442	19,296	64,507	37,072
4	1,288	57,234	18,806	52,142	180,784	83,160	367	6	87	38	86	145	92
2	1,012	33,445	10,099	26,875	87,132	40,598	37	186	289,736	85,501	421,877	1,569,905	682,173
3	17	1,684	459	1,460	8,246	2,070	371	102	143,913	32,813	171,637	804,212	287,229
4	45	4,079	1,361	3,869	12,633	5,810	372	25	34,569	18,999	87,267	187,600	116,465
9	214	18,026	6,887	19,938	72,773	34,682	373	19	28,785	4,441	19,747	48,931	26,166
5	531	43,490	21,589	66,809	220,744	113,871	374	34	82,382	29,210	143,140	529,017	252,221
1	478	41,530	20,551	63,993	209,282	109,394	379	6	87	38	86	145	92
9	53	1,960	1,038	2,816	11,462	4,477	38	350	57,775	23,685	98,143	240,426	158,747
6	419	241,260	42,477	170,500	709,609	338,588	381	67	28,638	12,244	55,879	131,312	91,228
1	1	-	34	-	-	-	382	7	9,754	2,935	13,151	35,481	17,910
4	236	181,921	25,877	110,924	454,862	224,043	383	104	8,526	2,716	9,016	24,410	14,065
5	179	57,558	16,163	57,889	245,349	110,493	384	152	6,434	3,143	9,347	24,180	20,111
6	3	-	403	-	-	-	386	15	1,340	649	1,893	5,163	3,727
7	1,753	251,819	60,160	251,212	641,798	431,118	387	5	3,083	1,998	8,857	19,880	11,706
1	1,569	238,668	54,628	228,846	602,644	401,000	39	691	62,773	28,566	89,638	277,935	140,086
8	78	3,162	2,087	5,649	11,055	8,429	391	84	2,035	740	2,066	5,894	3,055
8	106	9,989	3,445	16,717	28,099	21,689	393	12	4,130	783	3,074	9,000	4,512
8	618	368,443	39,821	180,904	1,218,821	603,305	394	102	12,453	9,171	24,002	78,961	37,343
1	22	56,829	3,665	17,989	162,055	63,774	395	34	5,081	1,733	7,273	19,834	12,867
3	89	68,761	8,310	38,466	250,179	190,777	396	18	6,399	4,083	13,577	27,202	15,282
4	115	16,099	2,599	9,669	51,855	24,732	398-99	441	32,675	12,056	39,646	137,044	67,027
5	94	37,794	6,633	30,756	180,563	66,162							
6	6	768	133	436	1,506	667							
7	30	8,450	1,092	3,888	18,005	5,251							
9	262	179,742	17,389	79,700	554,658	251,942							
9	111	421,244	17,284	92,592	1,050,728	203,656							
1	16	360,030	12,213	68,878	808,489	132,792							
5	38	5,425	633	1,978	16,741	6,552							
9	57	55,789	4,438	21,736	225,498	64,312							
0	164	106,040	19,497	83,709	413,525	215,415							
1	5	62,197	6,158	33,737	205,312	107,407							
6	52	20,961	6,273	25,948	99,921	55,823							
7	107	22,882	7,066	24,024	108,292	52,185							
1	272	38,752	36,513	86,805	292,827	138,272							
1	34	13,813	5,748	20,061	87,579	32,389							
2	8	363	125	456	1,587	623							
4	119	17,188	25,280	54,548	162,144	84,648							
5	4	303	145	368	876	478							
6	33	991	928	2,100	7,379	3,440							
9	74	6,094	4,287	9,272	33,262	16,694							
2	801	350,093	67,035	276,506	838,998	547,334							
1	63	55,646	14,237	69,983	205,397	141,738							
2	50	39,080	11,432	42,569	117,992	69,663							
3	22	1,075	523	1,867	6,292	3,669							
4	24	104,572	7,336	33,717	130,918	83,025							
5	131	65,847	12,914	50,670	127,943	89,540							
6	50	13,820	5,304	18,157	37,629	29,224							
7	380	36,753	6,238	20,995	70,178	39,440							

Total may not add to total because of rounding.



## 1956 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital expenditures	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	16,550	\$833,383	1,480,684	\$6,358,952	\$25,796,729	\$11,845,048							
19	16	752	4,784	20,794	77,078	35,468	303	1	-	4	-	-	-
191	2	-	812	-	-	-	306	53	3,104	6,411	28,660	84,124	50,374
192	5	312	3,418	14,704	58,234	25,808	307	123	7,561	7,962	31,850	104,415	54,822
193	2	-	105	-	-	-							
195	2	-	28	-	-	-	31	254	2,950	31,936	89,355	302,200	140,186
196	1	-	98	-	-	-	311	31	473	5,085	18,828	76,907	27,782
199	4	69	323	1,432	2,799	1,969	312	8	14	164	641	2,271	940
20	2,983	50,598	116,156	427,926	2,568,823	931,685	313	12	94	1,138	2,900	16,756	4,282
201	254	3,567	13,861	57,325	445,400	86,886	314	119	2,177	22,022	58,579	178,367	93,714
202	440	8,682	17,013	67,960	394,884	146,631	315	3	2	60	161	373	188
203	126	-	12,391	-	-	-	316	30	80	1,134	2,816	9,888	4,642
204	284	3,399	3,072	11,750	129,865	32,910	317	28	99	2,029	4,631	14,046	7,372
205	1,056	10,731	34,843	127,589	460,248	248,417	319	23	11	304	799	3,592	1,266
206	2	-	2,312	-	-	-							
207	214	3,247	13,890	42,099	304,417	114,894	32	865	70,114	68,501	306,692	962,881	619,969
208	390	9,523	14,815	66,528	360,663	168,926	321	14	4,622	5,613	31,136	88,854	62,411
209	217	1,563	3,959	14,352	133,306	33,294	322	50	9,305	16,221	64,986	191,059	122,254
21	113	1,710	14,413	38,824	181,542	86,654	323	63	2,388	5,669	30,881	101,582	66,393
211	1	-	170	-	-	-	324	26	26,324	7,421	35,648	148,733	97,352
212	89	1,152	13,700	36,618	170,975	82,820	325	118	7,721	10,546	46,775	119,512	85,548
213	7	-	85	-	-	-	326	33	5,657	5,097	20,499	42,995	33,563
214	16	483	458	1,176	4,719	2,061	327	349	6,790	6,219	23,536	88,749	46,778
22	969	18,454	92,779	291,633	1,068,841	468,355	328	79	137	663	2,224	7,127	4,008
221	20	92	1,573	5,293	17,500	7,538	329	133	7,170	11,052	51,007	174,270	101,662
222	87	1,393	9,321	30,408	111,592	46,764	33	573	291,723	279,655	1,495,402	7,021,604	2,718,728
223	32	922	3,556	14,211	58,482	22,586	331	115	234,388	210,474	1,145,668	5,630,763	2,119,617
224	70	972	4,516	14,151	46,266	22,626	332	176	10,698	24,657	121,767	303,055	188,542
225	482	7,488	41,793	115,720	377,465	178,284	333	12	11,799	4,602	21,344	116,036	49,273
226	67	1,742	4,579	18,189	49,827	28,568	334	34	1,254	1,876	8,872	101,164	20,516
227	49	2,428	9,244	35,213	188,532	69,936	335	41	10,569	15,153	77,960	387,965	145,081
228	110	1,772	12,183	37,126	129,712	55,376	336	121	2,613	7,341	34,671	96,325	52,447
229	52	1,645	6,014	21,322	89,465	36,677	339	74	20,402	15,552	85,120	386,296	143,252
23	2,009	8,967	162,632	399,427	1,105,374	578,213	34	1,397	44,751	115,789	539,353	1,836,709	942,890
231	207	2,157	23,997	77,035	238,136	107,182	341	11	1,827	3,838	18,506	98,018	52,163
232	347	2,206	43,552	103,935	278,615	146,244	342	115	2,136	8,143	33,683	88,435	54,579
233	683	1,594	46,618	99,517	230,324	142,560	343	91	4,407	10,624	47,097	159,632	82,688
234	153	970	18,038	41,054	109,862	58,920	344	572	13,492	39,740	196,027	679,993	321,704
235	38	70	1,235	3,027	8,200	4,556	345	93	7,461	10,891	52,653	181,963	100,298
236	194	719	15,411	37,654	95,919	56,256	346	123	5,082	13,268	59,642	179,561	87,996
237	23	7	126	400	1,900	799	347	130	774	3,091	12,310	50,797	25,488
238	75	184	4,741	12,254	43,552	19,959	348	96	1,640	6,343	25,627	110,809	55,450
239	289	1,060	8,914	24,551	98,866	41,737	349	166	7,932	19,851	93,808	287,501	162,524
24	1,183	4,987	15,184	45,582	169,122	78,430	35	1,356	58,315	116,503	558,029	1,779,240	997,499
242	724	2,545	5,270	12,054	40,243	21,880	351	12	4,406	13,291	53,048	134,368	80,242
243	258	1,402	5,481	20,202	78,198	32,931	352	36	1,996	3,489	17,343	105,050	44,976
244	66	262	1,565	4,771	19,695	8,451	353	124	7,993	20,279	102,965	366,928	197,135
249	135	778	2,868	8,555	30,986	15,168	354	269	17,955	18,882	98,876	290,526	188,457
25	479	4,423	20,613	74,919	255,134	130,002	355	196	7,925	18,825	89,555	222,775	131,902
251	304	1,657	12,909	43,820	152,006	74,910	356	258	10,879	23,932	116,405	337,639	186,566
252	21	811	3,035	12,319	37,821	21,003	357	13	914	1,431	6,976	16,199	3,805
253	23	377	885	3,894	11,748	6,341	358	57	3,130	10,428	47,569	243,305	123,310
254	72	1,204	2,590	10,955	37,599	21,105	359	391	3,117	5,946	25,292	62,450	41,106
259	59	374	1,194	3,931	15,960	6,643	36	444	56,079	136,002	626,128	2,031,875	1,174,567
26	354	37,011	40,565	181,915	783,877	375,405	361	98	16,827	52,979	270,733	843,159	530,730
262	34	18,220	9,536	49,376	205,250	104,235	362	45	4,547	9,478	43,980	132,892	78,797
263	3	3,720	291	1,329	4,738	1,970	363	23	2,602	5,231	24,078	92,976	57,017
264	146	10,578	15,921	72,486	329,695	164,922	364	134	6,728	17,922	71,488	311,121	158,040
265	171	4,493	14,817	58,724	244,194	104,278	365	87	4,705	19,722	83,223	265,139	113,024
27	1,778	20,279	58,386	264,810	707,930	468,791	366	7	589	4,210	21,812	52,057	34,729
271	330	6,942	22,445	104,002	253,176	169,701	367	19	17,325	20,317	83,549	240,822	161,826
272	21	2,105	6,691	33,404	142,944	97,834	369	31	2,756	6,143	27,265	93,709	40,404
273	52	3,053	6,310	28,473	64,971	43,883	37	166	28,609	72,730	385,305	1,450,401	606,617
274	25	59	562	2,316	5,703	3,898	371	79	16,328	25,869	145,886	733,892	248,954
275	1,071	6,438	14,906	62,962	172,648	103,186	372	32	5,358	16,953	83,542	228,590	135,550
277	11	76	443	1,382	3,410	2,020	373	20	584	4,648	25,703	61,005	34,165
278	102	552	2,451	8,001	22,917	15,498	374	18	5,954	24,273	126,639	410,031	181,363
279	166	1,054	4,578	24,270	42,161	32,771	379	17	385	987	3,535	16,883	6,585
28	603	47,921	45,137	217,349	1,265,344	667,557	38	189	6,035	20,579	92,587	251,577	165,999
281	120	17,578	13,447	67,369	412,745	193,179	381	20	448	1,461	5,732	12,482	7,152
282	26	4,267	7,422	35,120	166,903	67,244	382	32	3,824	9,792	49,639	122,663	82,651
283	81	12,890	8,579	42,647	299,285	226,599	383	12	171	336	1,596	2,996	2,043
284	123	6,476	3,302	14,249	77,865	37,958	384	98	1,201	5,534	20,789	76,370	51,528
285	88	2,380	5,200	25,564	145,548	62,967	385	9	202	1,125	4,294	10,829	7,207
286	10	262	536	2,010	15,961	11,646	386	13	108	586	1,816	5,550	3,018
287	40	654	1,467	6,379	36,582	12,494	387	5	81	1,745	8,721	20,687	12,400
289	115	3,414	5,184	24,011	110,455	55,470	39	536	11,187	29,335	109,730	362,005	196,965
29	94	51,038	17,364	97,913	1,190,848	244,596	391	48	37	506	1,625	5,098	2,798
291	15	48,610	13,880	82,084	1,105,613	213,014	393	12	399	900	3,634	10,875	5,691
295	46	1,330	1,761	6,941	41,055	14,545	394	101	3,595	8,471	26,766	87,692	43,641
299	33	1,098	1,723	8,888	44,180	17,037	395	39	535	1,372	5,378	16,200	9,547
30	189	17,480	21,641	95,279	424,324	216,472	396	35	1,003	3,828	14,944	36,117	20,431
301	7	6,679	6,433	32,745	229,182	108,218	398-99	301	5,618	14,258	57,383	206,023	114,857
302	5	-	831	-	-	-							

Detail may not add to total because of rounding.



(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital expenditures	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establishments	Capital expenditures	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	17, 117	\$949, 373	1, 473, 372	\$6, 680, 443	\$26, 777, 032	\$12, 622, 942							
19	11	408	3, 311	14, 399	48, 326	20, 499	302	5	\$-	660	\$-	\$-	\$-
191	1	-	631	-	-	-	303	1	-	4	-	-	-
192	3	172	2, 273	9, 504	35, 823	13, 342	306	62	3, 026	6, 677	29, 391	84, 032	48, 775
193	1	-	64	-	-	-	307	134	6, 012	7, 750	32, 623	115, 401	59, 200
194	1	-	19	-	-	-							
196	1	-	11	-	-	-	31	247	2, 837	31, 030	92, 875	307, 103	145, 976
199	4	15	313	1, 602	3, 920	2, 782	311	29	451	4, 657	18, 349	74, 224	30, 481
							312	7	16	116	482	1, 234	700
20	3, 299	72, 422	121, 214	475, 064	2, 851, 890	1, 076, 580	313	13	44	1, 137	3, 125	15, 918	4, 333
201	266	4, 626	13, 847	61, 743	524, 839	113, 793	314	121	2, 143	21, 929	62, 474	187, 930	96, 421
202	794	14, 843	22, 731	95, 280	525, 437	213, 283	315	3	8	155	425	980	517
203	116	-	11, 733	-	-	-	316	28	62	882	2, 315	8, 438	4, 010
204	262	6, 192	3, 021	12, 104	127, 136	34, 139	317	25	96	1, 885	4, 853	14, 951	7, 912
205	1, 043	22, 108	35, 022	133, 416	504, 332	283, 337	319	21	17	269	852	3, 428	1, 602
206	2	-	2, 267	-	-	-							
207	215	4, 033	13, 701	44, 717	318, 044	121, 888	32	907	57, 377	68, 270	310, 965	968, 819	640, 008
208	377	10, 185	14, 320	68, 798	362, 142	163, 939	321	12	2, 878	5, 030	28, 556	82, 976	61, 747
209	224	3, 145	4, 572	16, 360	132, 776	39, 162	322	47	9, 788	16, 595	66, 593	186, 346	121, 955
							323	70	2, 438	5, 344	29, 669	113, 447	78, 944
21	107	2, 550	13, 293	35, 700	178, 257	85, 923	324	26	19, 925	7, 028	34, 584	142, 962	95, 349
211	2	-	191	-	-	-	325	115	5, 677	10, 308	46, 695	114, 920	79, 805
212	82	1, 904	12, 585	33, 487	166, 762	81, 345	326	31	1, 943	4, 954	20, 469	41, 932	33, 201
213	7	-	48	-	-	-	327	375	6, 776	5, 922	22, 967	85, 590	48, 628
214	16	534	469	1, 320	6, 098	2, 969	328	80	332	1, 322	4, 890	11, 220	7, 210
							329	151	7, 620	11, 767	56, 542	189, 426	113, 169
22	928	20, 578	84, 288	271, 179	1, 006, 049	425, 629							
221	19	82	1, 380	4, 881	16, 380	6, 006	33	585	339, 320	273, 457	1, 561, 476	7, 087, 051	2, 864, 604
222	80	1, 378	8, 617	28, 383	97, 975	42, 259	331	136	291, 728	213, 820	1, 250, 942	6, 066, 346	2, 353, 416
223	41	1, 255	3, 669	14, 743	55, 114	23, 098	332	180	10, 327	23, 975	120, 472	297, 369	188, 440
224	77	1, 642	5, 719	19, 014	66, 594	29, 861	333	10	16, 290	4, 159	22, 280	104, 972	45, 761
225	453	9, 121	38, 577	111, 829	386, 027	174, 526	334	30	2, 316	2, 351	11, 780	81, 073	22, 172
226	56	1, 136	3, 466	14, 178	37, 788	22, 944	335	41	6, 208	13, 742	72, 796	307, 218	120, 899
227	42	2, 116	7, 351	28, 505	140, 377	49, 864	336	128	2, 599	6, 443	32, 615	82, 282	48, 685
228	106	2, 432	9, 860	30, 132	122, 178	45, 779	339	60	9, 852	8, 967	50, 591	147, 791	85, 231
229	54	1, 416	5, 649	19, 514	83, 616	31, 292							
							34	1, 435	59, 496	117, 336	581, 583	1, 952, 175	1, 009, 739
23	2, 027	9, 155	164, 763	412, 450	1, 131, 020	609, 841	341	12	1, 488	3, 857	19, 974	101, 363	41, 551
231	173	1, 017	24, 061	78, 388	236, 562	112, 609	342	113	1, 714	7, 087	29, 257	79, 653	48, 890
232	338	2, 364	40, 728	99, 318	270, 743	144, 157	343	68	4, 511	6, 945	33, 419	106, 276	57, 241
233	721	2, 030	49, 024	107, 213	244, 702	155, 730	344	619	18, 449	46, 517	243, 275	848, 638	404, 600
234	152	1, 219	17, 684	40, 760	110, 904	60, 422	345	109	13, 153	10, 914	53, 860	176, 320	104, 562
235	48	248	4, 424	13, 756	35, 486	19, 459	346	125	5, 298	12, 372	57, 937	162, 709	86, 667
236	194	891	16, 106	38, 960	101, 377	59, 035	347	137	1, 547	2, 941	11, 428	36, 583	20, 241
237	18	5	120	387	1, 739	800	348	92	2, 126	5, 989	25, 105	100, 188	51, 318
238	72	385	3, 940	10, 205	33, 133	17, 305	349	160	11, 210	20, 714	107, 328	340, 445	194, 669
239	311	996	8, 676	23, 463	96, 374	40, 324							
							35	1, 421	62, 302	119, 406	623, 046	1, 870, 007	1, 087, 089
24	1, 196	6, 174	14, 406	43, 495	145, 778	72, 178	351	13	11, 148	15, 965	91, 542	241, 580	140, 702
242	741	2, 810	4, 852	10, 781	33, 329	19, 606	352	36	2, 291	3, 386	16, 606	108, 340	47, 054
243	246	1, 701	5, 388	19, 720	69, 469	32, 008	353	115	9, 167	19, 376	102, 184	359, 190	203, 420
244	57	428	1, 414	4, 502	15, 807	7, 152	354	297	10, 647	19, 889	107, 506	283, 215	190, 706
249	152	1, 235	2, 752	8, 492	27, 173	13, 412	355	203	9, 850	17, 488	89, 167	220, 333	135, 351
							356	269	11, 063	25, 098	131, 669	383, 037	224, 520
25	485	5, 112	20, 670	78, 106	255, 115	132, 752	357	16	1, 240	1, 799	9, 436	20, 226	5, 792
251	294	1, 931	12, 569	44, 189	145, 739	74, 853	358	67	3, 212	9, 196	41, 613	175, 111	85, 133
252	23	1, 538	2, 944	13, 060	39, 589	22, 522	359	405	3, 684	7, 209	33, 323	78, 975	54, 411
253	18	237	729	3, 048	9, 646	4, 312							
254	88	1, 146	3, 033	12, 799	41, 640	22, 529	36	464	53, 267	134, 493	658, 069	2, 193, 297	1, 332, 756
259	62	260	1, 395	5, 010	18, 501	8, 536	361	74	15, 838	46, 731	265, 936	887, 730	555, 661
							362	77	6, 786	16, 773	80, 374	267, 788	178, 758
26	366	39, 372	41, 286	190, 599	791, 950	385, 184	363	30	2, 426	6, 631	30, 130	118, 856	69, 148
262	26	21, 204	12, 009	66, 915	281, 998	145, 690	364	131	6, 623	16, 631	70, 447	303, 580	171, 800
263	6	2, 703	903	5, 497	19, 040	10, 025	365	22	987	7, 239	32, 682	135, 351	53, 565
264	133	4, 667	10, 975	48, 314	211, 319	110, 150	366	17	1, 993	7, 579	39, 684	111, 764	65, 246
265	195	10, 464	16, 840	67, 361	269, 956	114, 880	367	82	17, 473	28, 352	117, 266	290, 030	200, 802
266	6	334	559	2, 512	9, 637	4, 439	369	31	1, 141	4, 557	21, 547	78, 198	37, 776
27	1, 825	23, 660	58, 949	279, 369	742, 674	486, 519	37	174	28, 805	74, 834	415, 388	1, 656, 589	696, 042
271	339	8, 383	21, 957	106, 384	252, 453	169, 996	371	90	10, 048	25, 029	147, 968	745, 209	268, 796
272	21	2, 950	7, 251	38, 656	157, 177	107, 316	372	29	4, 780	16, 990	86, 727	247, 806	146, 413
273	39	1, 859	5, 986	27, 889	57, 060	38, 556	373	20	4, 852	5, 550	32, 157	81, 281	39, 426
274	13	72	314	1, 526	3, 757	2, 297	374	18	8, 754	26, 320	144, 550	561, 833	233, 963
275	1, 156	7, 813	16, 775	74, 008	208, 239	119, 998	379	17	371	945	3, 986	20, 460	7, 444
276	11	546	222	960	2, 570	1, 609							
277	10	26	407	1, 333	3, 165	1, 947	38	188	8, 770	20, 812	97, 263	268, 490	175, 842
278	95	871	2, 656	8, 784	24, 380	16, 892	381	28	304	1, 279	5, 148	11, 762	7, 207
279	141	1, 140	3, 381	19, 829	33, 873	27, 908	382	39	4, 922	10, 666	53, 782	140, 413	97, 537
							383	5	74	329	1, 560	3, 325	2, 014
28	594	67, 028	45, 605	230, 943	1, 285, 221	708, 350	384	97	3, 084	5, 727	23, 846	80, 939	52, 077
281	128	15, 892	13, 399	71, 568	415, 435	188, 494	385	3	32	631	2, 292	6, 087	3, 360
282	29	31, 797	9, 018	43, 857	177, 497	79, 549	386	11	102	356	1, 495	4, 448	2, 457
283	81	11, 525	8, 788	47, 502	333, 149	258, 160	387	5	252	1, 824	9, 140	21, 516	11, 190
284	116	1, 573	2, 780	11, 499	79, 630	50, 110							
285	89	2, 577	5, 248	26, 595	138, 639	60, 701	39	540	14, 086	27, 099	103, 596	331, 139	179, 014
286	10	259	474	1, 715	15, 106	10, 690	391	48	33	398	1, 571	4, 957	2, 706
287	37	508	1, 262	5, 247	34, 611	10, 850							

Detail may not add to total because of rounding.







## 1960 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital expenditures	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	17,793	\$876,064	1,417,758	\$7,010,743	\$26,591,904	\$12,917,416							
19	17	1,298	2,807	16,603	47,923	23,805	307	184	\$4,211	7,580	\$32,638	\$100,771	\$50,502
192	4	441	990	6,244	15,657	8,261	31	250	3,322	34,132	101,783	333,314	155,964
193	4	412	875	4,852	16,765	7,463	311	26	263	3,444	15,507	66,410	22,004
194	2	-	242	-	-	-	312	6	-	109	-	-	-
195	1	-	2	-	-	-	313	15	132	1,094	2,929	13,857	3,901
199	6	194	698	3,977	12,001	6,625	314	135	2,763	26,087	74,272	222,030	113,961
20	3,015	67,438	120,164	533,454	3,343,797	1,262,547	315	2	-	97	-	-	-
201	327	6,077	14,978	71,950	629,980	124,280	316	24	15	801	1,988	7,138	3,480
202	693	13,347	21,705	104,911	588,156	222,979	317	28	94	2,334	5,894	20,112	10,498
203	144	-	12,950	-	-	-	319	14	35	166	532	1,709	901
204	243	4,437	3,241	14,512	147,252	44,820	32	1,028	59,432	63,309	320,929	985,467	609,861
205	835	17,104	33,761	147,224	539,037	308,486	321	10	1,107	5,166	34,264	108,912	63,620
206	2	-	2,063	-	-	-	322	49	12,915	16,355	75,060	214,403	139,991
207	224	4,850	13,975	51,710	357,454	148,463	323	68	954	2,667	13,809	60,782	31,591
208	359	9,765	13,496	72,088	361,182	175,470	324	26	20,876	6,497	38,100	135,325	90,521
209	188	2,767	3,995	17,499	224,230	47,838	325	108	7,423	9,059	45,464	109,407	75,621
21	98	2,315	12,794	37,654	220,923	113,190	326	30	640	4,586	21,038	43,577	33,021
211	2	-	126	-	-	-	327	478	6,635	7,758	33,940	132,327	69,781
212	72	1,679	11,899	34,227	198,108	103,841	328	73	207	1,276	4,976	11,659	7,731
213	7	-	59	-	-	-	329	186	8,675	9,945	54,278	169,075	97,961
214	17	466	710	2,380	17,684	7,244	33	598	318,126	233,000	1,453,297	5,890,122	2,541,861
22	863	18,153	78,330	271,901	1,025,354	440,343	331	132	288,064	182,454	1,168,480	4,962,609	2,091,451
221	20	76	879	3,214	10,996	4,722	332	172	8,729	20,684	110,604	263,134	170,881
222	84	2,822	10,101	36,598	138,503	55,265	333	11	2,468	3,539	19,029	98,650	41,601
223	34	525	2,948	13,156	43,161	19,393	334	29	2,468	2,009	12,313	90,904	22,221
224	77	1,377	5,645	20,880	73,370	34,109	335	37	10,729	11,312	68,689	278,780	106,901
225	398	6,792	37,273	114,156	409,970	181,849	336	144	1,799	5,452	29,639	77,253	45,551
226	63	1,568	3,817	17,730	49,900	28,513	339	73	3,869	7,550	44,543	118,792	63,231
227	38	2,331	5,841	25,298	119,762	46,131	34	1,652	51,621	110,810	588,126	1,925,904	940,831
228	95	1,780	7,803	25,158	105,569	43,103	341	13	4,233	4,222	25,192	126,020	46,871
229	54	882	4,023	15,711	74,123	27,258	342	128	1,930	7,267	33,140	89,982	54,901
23	2,044	12,497	172,027	466,059	1,260,092	700,563	343	84	4,476	8,373	41,882	162,626	80,251
231	135	2,926	24,731	89,260	266,754	128,992	344	716	16,333	43,178	241,507	776,040	336,431
232	333	2,440	38,749	104,501	285,157	159,131	345	137	5,441	10,220	55,507	157,661	91,651
233	801	3,352	55,839	131,810	292,976	190,059	346	129	3,671	8,818	42,803	137,526	68,221
234	149	1,005	17,236	42,901	114,181	63,130	347	146	2,259	2,777	13,712	41,465	24,361
235	42	416	3,916	14,434	35,697	20,899	348	109	2,970	7,269	34,231	133,670	68,141
236	208	985	18,146	46,954	132,702	76,877	349	190	10,308	18,686	100,152	300,914	169,971
237	13	21	104	460	1,947	885	35	1,556	52,465	110,426	629,949	1,790,090	1,071,711
238	74	427	4,757	11,829	36,824	19,968	351	11	5,424	11,246	71,170	197,491	130,931
239	289	925	8,549	23,910	93,854	40,622	352	36	1,293	3,295	19,022	87,418	45,961
24	1,099	4,835	12,678	42,822	154,782	77,222	353	125	4,126	15,478	88,653	296,445	166,141
242	699	2,495	4,764	11,565	37,906	22,661	354	400	12,078	19,238	112,628	285,058	190,251
243	195	1,090	4,125	18,437	71,638	33,434	355	240	9,705	18,100	100,340	248,054	145,851
244	45	251	1,113	3,995	14,398	6,480	356	256	9,936	22,884	129,994	381,159	218,441
249	160	999	2,676	8,825	30,840	14,647	357	23	3,510	5,949	38,250	62,030	28,701
25	578	4,969	23,277	96,918	315,585	159,616	358	75	2,764	8,597	43,630	174,240	104,611
251	375	3,131	14,565	56,358	186,889	92,195	359	390	3,629	5,639	26,262	58,195	40,701
252	28	469	3,657	17,172	53,532	28,663	36	543	59,421	126,799	704,260	2,081,526	1,284,001
253	25	636	1,100	4,839	14,354	7,184	361	100	9,982	28,930	178,474	491,086	301,411
254	95	482	3,179	15,290	48,810	26,146	362	76	13,319	27,605	173,025	458,961	284,001
259	55	251	776	3,259	12,000	5,428	363	29	2,405	4,914	25,547	110,535	63,811
26	370	27,805	41,770	219,620	883,063	443,547	364	161	5,926	15,083	68,523	325,003	182,811
262	20	11,245	11,376	72,114	287,896	152,756	365	22	687	4,309	21,480	77,581	26,111
263	14	1,937	3,264	21,252	79,403	40,338	366	25	3,848	7,782	46,402	113,582	78,911
264	135	5,158	11,299	54,463	239,675	128,282	367	100	20,394	34,334	168,649	426,180	304,611
265	197	9,323	15,406	69,514	267,017	117,664	369	30	2,860	3,842	22,160	78,598	42,011
266	4	142	425	2,277	9,072	4,507	37	208	32,809	71,229	449,534	1,602,064	748,411
27	2,041	25,472	66,435	339,689	893,195	584,402	371	100	11,385	28,667	186,555	786,782	312,811
271	348	7,248	22,583	117,446	272,949	183,983	372	40	9,656	16,834	108,962	278,219	182,311
272	36	5,545	12,831	68,676	220,099	142,533	373	22	4,832	5,289	33,308	78,995	43,811
273	53	982	4,555	22,260	69,880	46,606	374	18	6,083	18,841	114,526	424,158	198,511
274	19	56	388	1,732	4,778	2,871	379	28	853	1,598	6,183	33,910	10,811
275	1,306	8,787	17,223	85,019	230,772	138,558	38	226	9,424	23,129	121,183	339,906	221,911
276	26	955	1,630	7,822	26,206	17,056	381	31	306	1,552	7,138	18,971	12,411
277	13	60	348	1,312	3,361	2,040	382	61	7,425	12,896	71,140	196,020	128,511
278	89	460	2,912	10,836	24,767	16,710	383	7	33	228	1,049	2,035	1,411
279	151	1,379	3,965	24,586	40,383	34,045	384	103	1,272	5,751	28,402	88,549	61,711
28	621	72,205	50,488	290,779	1,501,198	865,471	385	3	96	420	1,807	6,414	3,911
281	140	28,075	10,552	61,067	349,764	184,270	386	15	45	307	1,415	3,665	2,211
282	36	20,503	15,973	93,166	390,928	190,841	387	6	247	1,975	10,232	24,252	11,411
283	83	13,461	10,300	64,818	368,362	285,988	39	592	11,295	26,324	111,725	398,138	218,411
284	128	2,317	3,055	13,962	113,024	68,677	391	57	27	459	1,846	6,488	3,411
285	84	1,849	3,847	20,720	129,606	64,169	393	13	330	888	3,911	11,066	6,111
286	9	30	139	653	1,964	1,046	394	115	1,528	6,721	23,958	80,801	39,411
287	34	1,586	1,446	7,386	43,910	13,146	395	53	968	1,955	8,575	31,868	19,411
289	107	4,384	5,176	29,007	103,640	57,334	396	33	493	3,213	13,224	27,204	14,111
29	132	24,036	15,989	101,800	1,142,638	223,367	398-99	321	7,949	13,088	60,211	240,711	135,111
291	20	19,449	12,985	86,456	1,069,340	189,867							
295	82	4,388	2,049	9,766	53,938	23,407							
299	30	199	955	5,578	19,360	10,093							
30	262	17,126	21,841	112,658	456,823	230,383							
301	7	9,939	6,142	39,958	231,173	109,126							
302	6	-	1,079	-	-	-							
303	2	-	40	-	-	-							
306	63	1,903	7,000	36,980	115,176	65,523							

Detail may not add to total because of rounding.

## 1961 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital expenditures	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	17,709	\$756,767	1,369,508	\$6,926,969	\$25,701,716	\$12,507,579							
19	20	22,919	3,788	23,978	80,995	38,276	31	249	\$2,950	34,128	\$103,316	\$327,656	\$156,655
192	4	-	1,308	-	-	-	311	25	304	3,125	14,314	58,509	19,725
193	5	276	1,299	7,237	35,539	12,125	312	6	-	110	-	-	-
194	2	-	174	-	-	-	313	13	94	1,076	3,070	12,720	4,342
199	9	373	1,007	5,722	17,789	8,749	314	137	2,359	26,504	76,483	225,043	116,262
							315	2	-	100	-	-	-
20	2,926	63,835	119,921	542,357	3,250,598	1,281,738	316	25	27	809	2,016	7,368	3,319
201	314	7,881	14,624	71,011	638,927	120,234	317	27	134	2,245	6,140	20,311	10,730
202	657	12,452	20,987	105,173	592,155	218,848	319	14	15	159	530	1,625	976
203	146	-	13,185	-	-	-							
204	229	2,098	3,205	14,427	152,303	46,726	32	1,029	36,116	60,406	306,202	950,188	569,198
205	829	14,214	33,378	151,305	552,232	313,751	321	11	2,606	4,771	29,430	86,392	36,200
206	2	-	1,906	-	-	-	322	49	8,012	15,822	73,561	215,481	134,776
207	225	5,255	14,289	54,096	380,091	168,152	323	64	718	2,576	13,779	58,792	28,048
208	342	8,746	13,532	73,470	316,617	182,696	324	25	6,918	6,082	36,706	134,314	91,847
209	182	3,866	4,815	15,259	104,108	35,436	325	106	4,190	8,606	42,912	107,461	72,991
							326	32	768	4,331	19,551	42,372	31,119
21	92	2,451	11,399	33,793	205,403	104,696	327	490	7,524	7,801	34,542	131,839	71,455
211	1	-	-	-	-	-	328	70	171	1,182	4,955	12,026	7,627
212	67	2,180	10,649	30,981	182,320	95,082	329	182	5,209	9,235	50,766	161,511	95,135
213	7	-	95	-	-	-							
214	17	192	655	2,312	20,386	8,274	33	586	231,241	208,214	1,367,194	5,454,786	2,277,123
							331	123	194,851	158,079	1,073,884	4,509,138	1,818,693
22	842	23,349	75,032	262,809	1,037,026	451,573	332	164	7,132	18,340	99,895	231,679	146,989
221	19	116	989	3,144	14,866	6,038	333	8	4,027	3,367	19,685	100,946	43,785
222	84	3,514	9,932	34,406	131,011	53,377	334	31	1,238	2,131	13,181	96,594	23,780
223	31	1,089	2,930	13,000	39,926	19,554	335	38	15,161	11,130	68,175	279,570	111,987
224	72	852	5,298	19,352	71,394	33,872	336	147	1,845	5,505	30,450	78,518	44,685
225	388	9,929	35,487	114,743	436,558	200,316	339	75	6,987	9,662	61,924	158,341	87,204
226	59	1,707	3,669	15,982	52,218	28,467							
227	40	3,914	5,391	22,564	111,560	43,792	34	1,668	37,550	108,581	585,722	1,916,280	942,006
228	92	1,155	7,553	25,232	106,722	42,082	341	13	5,098	4,071	24,589	119,298	43,210
229	57	1,073	3,783	14,386	72,771	24,075	342	112	1,475	6,196	27,697	76,904	46,853
							343	82	2,398	7,801	38,524	154,347	78,450
23	2,063	9,336	169,634	467,999	1,283,852	727,468	344	733	9,824	42,622	240,179	769,520	335,326
231	144	1,043	24,669	90,479	264,563	136,200	345	142	5,369	9,685	54,609	148,426	87,968
232	318	2,089	36,700	98,194	281,309	158,637	346	129	3,208	8,338	41,210	136,884	66,737
233	817	3,105	57,879	137,352	309,201	199,983	347	149	1,628	2,943	14,237	45,702	25,847
234	144	1,012	16,216	42,555	114,015	65,007	348	112	1,667	7,560	37,202	134,274	64,718
235	43	326	3,660	13,941	33,899	21,675	349	196	6,883	19,365	107,475	330,925	192,897
236	207	606	16,886	46,309	137,137	78,716							
237	12	7	110	358	1,650	912	35	1,597	56,072	110,274	649,510	1,806,578	1,061,656
238	76	263	5,355	14,415	43,938	23,151	351	13	7,908	12,834	85,363	216,647	133,061
239	302	885	8,159	24,396	98,140	43,187	352	37	442	3,293	18,747	88,138	48,544
							353	128	2,807	14,168	80,919	255,528	142,322
24	1,028	3,145	12,155	41,166	153,592	74,269	354	419	10,034	20,926	125,172	315,512	207,504
242	640	1,568	4,522	11,138	35,648	20,581	355	243	6,730	18,165	103,279	261,671	152,293
243	180	874	3,955	17,853	73,431	32,528	356	262	12,919	22,681	134,562	389,147	218,937
244	51	157	1,077	3,910	14,047	6,054	357	28	8,458	5,063	33,433	73,203	34,197
249	157	546	2,601	8,265	30,466	15,106	358	68	3,853	7,656	41,898	150,098	84,656
							359	399	2,921	5,488	26,137	56,634	40,142
25	562	6,059	22,749	94,770	303,496	157,735							
251	374	2,894	14,083	54,638	176,030	90,286	36	549	54,889	129,718	752,042	2,129,072	1,291,026
252	26	2,308	3,661	17,450	55,321	29,595	361	102	9,517	26,636	174,584	456,655	279,006
253	22	319	1,069	4,956	14,858	7,278	362	72	10,205	32,528	215,318	558,521	340,336
254	92	435	3,103	14,773	45,942	25,424	363	26	1,178	4,404	23,922	97,523	59,068
259	48	103	833	2,953	11,345	5,152	364	161	5,067	14,075	65,830	311,117	163,506
							365	23	961	5,743	31,891	106,649	51,803
26	358	29,877	39,778	214,113	882,658	441,446	366	24	1,423	7,220	42,612	96,449	60,282
262	20	13,829	10,234	66,428	284,968	148,671	367	110	25,098	35,220	174,400	423,670	294,643
263	16	2,432	3,141	19,648	75,531	36,846	369	31	1,440	3,892	23,485	78,488	42,382
264	136	6,430	11,077	54,826	246,473	133,184							
265	183	6,982	14,911	70,914	266,362	117,826	37	211	25,766	60,995	383,053	1,182,022	587,439
266	3	204	415	2,297	9,324	4,919	371	103	10,759	23,328	144,103	541,349	228,469
							372	42	6,906	19,510	129,472	300,697	182,667
27	2,088	22,485	65,691	342,715	879,419	575,542	373	21	4,316	5,422	35,008	77,542	41,197
271	352	6,828	21,968	117,608	270,808	183,182	374	16	3,103	10,928	68,938	234,287	125,341
272	41	5,241	11,338	59,823	190,605	122,555	379	29	682	1,807	5,532	28,147	9,765
273	51	1,255	4,579	23,389	65,459	44,289							
274	25	105	475	1,790	4,893	2,748	38	230	6,626	24,118	132,358	367,063	240,559
275	1,336	6,796	18,628	93,824	245,703	150,055	381	33	582	1,705	8,079	21,772	13,454
276	29	916	1,646	8,614	32,879	19,861	382	59	3,760	13,629	80,889	217,439	143,495
277	13	28	404	1,464	3,665	2,159	383	9	116	285	1,156	2,293	1,528
278	90	442	2,801	11,458	24,936	17,098	384	104	1,824	5,549	28,590	91,479	63,720
279	151	874	3,852	24,745	40,471	33,595	385	6	30	389	1,496	5,149	3,480
							386	13	89	307	1,515	5,052	2,829
28	622	57,709	50,187	298,306	1,508,015	846,985	387	6	225	2,254	10,633	23,839	12,053
281	139	16,074	10,081	57,866	341,272	169,454							
282	37	17,615	15,264	92,928	391,255	184,004	39	584	8,693	26,421	113,364	405,160	224,050
283	80	13,833	10,344	66,777	365,830	287,519	391	58	29	454	1,851	6,526	3,144
284	126	4,986	2,933	14,416	114,387	69,447	393	14	37	779	3,347	8,786	5,019
285	85	2,047	4,693	27,335	140,115	61,488	394	111	1,870	6,841	24,246	84,146	40,879
286	11	141	143	623	1,693	863	395	54	735	1,995	8,848	32,240	19,337
287	36	923	1,417	7,199	43,814	12,823	396	34	856	3,125	13,263	28,036	14,286
289	108	2,090	5,312	31,162	109,649	61,387	398-99	313	5,166	13,227	61,809	245,436	141,335
29	133	32,666	14,990	99,495	1,120,195	214,836							
291	20	29,963	12,126	83,825	1,041,588	180,475							
295	85	2,086	1,968	10,214	59,382	24,403							
299	28	617	896	5,456	19,225	9,958							
30	272	23,033	21,329	112,707	457,662	243,303							



## 1962 STATISTICS FOR MANUFACTURING ESTABLISHMENTS IN PENNSYLVANIA BY INTERMEDIATE (THREE DIGIT) INDUSTRY GROUPS

(Money figures in thousands of dollars)

SIC code	Number of establishments	Capital expenditures	Number of employees	Wages and salaries	Value of production	Value added by manufacture	SIC code	Number of establishments	Capital invested	Number of employees	Wages and salaries	Value of production	Value added by manufacture
Total	17,820	\$794,906	1,378,576	\$7,205,654	\$27,142,309	\$13,197,320							
19	30	9,907	8,972	59,683	149,314	67,197	306	66	\$2,736	7,106	\$40,042	\$127,700	\$77,762
192	8	8,203	6,151	47,073	73,766	43,909	307	211	6,803	8,069	35,703	110,067	60,604
193	8	1,324	1,960	9,561	66,335	19,138							
194	2	-	201	-	-	-	31	248	3,186	34,261	107,644	343,450	163,823
196	1	-	7	-	-	-	311	21	242	2,745	13,266	54,876	15,470
199	11	380	653	3,049	9,213	4,150	312	5	36	98	409	1,456	860
							313	14	75	874	2,635	11,756	4,161
20	2,872	62,055	117,995	539,081	3,154,191	1,239,541	314	137	2,661	26,621	81,771	243,821	126,789
201	309	4,419	13,903	71,243	648,482	113,524	315	3	4	103	294	756	465
202	633	13,529	21,331	107,839	604,627	221,444	316	24	20	782	1,961	7,462	3,526
203	143	10,952	13,366	45,279	356,347	151,615	317	27	114	2,827	6,588	21,118	11,433
204	227	2,202	3,217	15,077	164,902	48,138	319	17	34	211	720	2,205	1,119
205	819	12,017	33,446	153,352	573,329	320,545							
206	2	-	1,797	-	-	-	32	1,023	47,841	59,782	320,803	1,005,254	606,115
207	226	5,876	14,404	56,818	384,117	169,557	321	10	3,830	4,894	34,378	98,296	48,348
208	342	9,265	13,261	74,770	319,863	177,626	322	51	7,541	15,286	76,208	222,994	140,466
209	171	3,795	3,270	14,703	102,524	37,092	323	64	1,241	2,708	14,985	65,361	33,132
							324	25	15,694	6,009	38,115	140,635	94,841
21	86	1,514	10,184	31,066	207,004	107,477	325	102	3,234	8,314	42,748	108,670	73,135
211	1	-	-	-	-	-	326	34	1,218	4,521	21,388	45,855	34,548
212	61	1,204	9,467	28,249	182,227	98,108	327	482	7,951	7,929	36,631	143,188	74,984
213	7	123	78	501	3,975	1,911	328	68	317	1,135	4,954	11,682	7,805
214	17	187	639	2,316	20,802	7,458	329	187	6,815	8,986	51,396	168,573	98,856
22	823	22,194	73,978	272,756	1,126,021	464,706	33	581	227,822	209,796	1,427,015	5,801,836	2,370,449
221	17	279	746	2,812	12,058	4,286	331	118	197,385	155,967	1,103,983	4,738,453	1,855,624
222	81	2,487	9,524	35,681	146,290	56,570	332	162	5,862	19,391	111,122	264,134	166,187
223	30	1,442	2,596	11,784	41,156	19,512	333	9	3,286	3,865	23,468	114,750	46,480
224	69	1,453	5,453	20,067	76,709	35,826	334	30	1,809	2,247	13,805	98,033	27,213
225	380	8,729	35,557	120,972	466,824	201,050	335	37	10,582	11,525	71,815	313,507	123,342
226	58	1,136	3,294	15,619	50,691	27,790	336	145	2,534	5,963	32,819	87,356	50,632
227	40	1,792	5,346	24,097	129,276	46,625	339	80	6,364	10,838	70,003	185,603	100,971
228	94	2,780	7,706	26,414	123,067	46,035							
229	54	2,096	3,756	15,310	79,950	27,012	34	1,673	45,275	105,989	585,511	1,985,611	1,026,857
							341	13	7,233	4,069	25,227	130,480	50,427
23	2,086	10,386	175,313	510,079	1,377,718	770,646	342	110	1,779	6,355	30,049	84,492	51,318
231	139	1,093	25,514	98,792	295,621	146,439	343	82	2,255	5,918	30,419	123,811	62,083
232	315	2,380	38,119	110,638	309,688	165,345	344	744	11,462	41,904	236,155	797,313	399,227
233	855	3,442	60,426	153,773	330,441	220,128	345	138	5,627	10,298	61,368	168,413	97,242
234	140	889	16,751	45,397	117,478	66,039	346	125	3,837	7,924	40,743	153,911	81,923
235	44	413	3,733	14,022	35,382	20,986	347	156	1,754	3,124	15,217	49,376	27,338
236	205	798	17,112	49,232	144,940	83,594	348	110	1,932	7,034	34,836	130,251	64,280
237	13	10	88	344	1,667	982	349	195	9,396	19,363	111,497	347,564	193,019
238	70	259	4,971	12,165	36,632	19,328							
239	305	1,102	8,599	25,716	105,869	47,805	35	1,622	67,871	112,515	695,759	1,960,924	1,131,590
							351	12	4,475	10,625	73,680	186,400	104,454
24	1,149	5,475	12,763	44,658	161,615	77,366	352	37	878	3,341	20,800	93,393	52,033
242	764	2,731	5,071	13,345	44,822	25,814	353	121	4,407	13,506	83,162	273,900	139,682
243	178	1,428	4,038	18,721	71,682	29,712	354	419	10,213	21,209	134,667	338,768	221,810
244	46	164	1,074	3,950	14,678	7,189	355	247	7,455	18,427	109,220	290,834	172,434
249	161	1,152	2,580	8,642	30,433	14,651	356	265	13,803	25,662	162,734	439,921	253,295
							357	29	17,869	4,662	32,160	91,871	40,204
25	564	4,682	23,276	99,984	330,362	172,118	358	72	5,432	8,757	49,349	176,120	100,470
251	373	3,041	14,076	56,812	191,152	97,530	359	420	3,339	6,326	29,987	69,717	47,208
252	28	688	3,697	17,686	56,828	30,846							
253	24	134	1,234	5,779	16,641	8,948	36	548	60,380	120,155	691,285	2,068,414	1,288,112
254	92	635	3,319	16,104	52,250	28,885	360	1	-	369	-	-	-
259	47	184	950	3,603	13,491	5,909	361	100	10,221	24,373	159,801	431,802	263,174
							362	72	15,204	24,429	158,815	388,979	246,377
26	368	36,815	41,073	226,074	939,154	469,840	363	27	1,867	5,075	27,817	109,758	67,536
262	20	17,676	10,537	68,295	289,684	152,576	364	159	5,070	14,707	69,995	359,968	216,866
263	16	1,793	3,125	20,272	76,871	34,630	365	25	1,175	5,897	32,022	106,501	53,186
264	140	5,720	11,522	59,466	265,362	143,976	366	25	2,000	6,987	44,533	129,969	84,938
265	189	11,334	15,451	75,443	295,449	132,779	367	109	23,528	34,866	177,830	460,382	315,536
266	3	292	438	2,598	11,788	5,879	369	30	1,315	3,452	20,472	81,055	40,499
27	2,059	28,525	64,785	345,988	888,649	576,623	37	218	34,922	66,531	445,520	1,507,882	726,347
271	346	5,371	20,975	117,405	278,175	188,969	371	100	8,379	22,987	157,945	638,001	274,342
272	41	5,830	11,500	59,128	178,460	113,121	372	49	19,159	22,503	156,053	422,671	254,578
273	51	1,356	4,666	23,746	67,349	44,934	373	20	1,984	5,274	33,683	80,671	39,239
274	25	317	553	2,218	5,677	3,181	374	19	4,813	13,617	90,323	323,764	144,860
275	1,316	12,786	18,318	96,450	251,550	151,977	379	30	587	2,150	7,516	42,775	13,328
276	30	1,114	1,708	9,219	37,711	21,133							
277	10	47	301	1,118	2,862	1,714	38	225	8,880	25,367	147,348	418,007	273,085
278	89	814	2,875	11,624	25,691	17,196	381	34	459	1,815	8,357	22,793	14,067
279	151	890	3,889	25,080	41,174	34,398	382	55	5,191	13,950	86,069	239,293	158,885
							383	11	640	600	4,045	8,421	4,768
28	617	51,930	50,436	306,310	1,639,988	941,954	384	101	1,927	6,461	35,359	114,501	78,180
280	1	-	421	-	-	-	385	6	9	66	194	557	434
281	132	14,128	9,816	60,145	350,214	177,452	386	12	226	328	1,515	5,053	2,782
282	41	17,230	15,393	95,357	425,311	200,458	387	6	428	2,147	11,809	27,389	13,969
283	74	12,429	10,342	69,464	430,563	345,726							
284	127	2,530	3,319	18,310	127,922	79,743	39	592	9,273	26,807	122,953	441,390	245,427
285	84	2,165	4,754	29,030	154,589	68,189	391	58	227	454	1,896	6,979	3,348
286	10	69	168	529	1,424	800	393	13	280	755	3,304	8,610	5,429
287	33	477	1,329	7,116	44,035	12,966	394	109	1,762	7,132	25,123	93,906	43,430
289	115	2,902	4,894	26,359	105,930	56,620	395	54	784	2,071	9,477	34,633	20,623
							396	38	652	3,171	14,263	31,806	17,198
29	142	39,836	15,221	100,510	1,133,351	202,790	398	111	4,326	8,146	41,968	187,659	111,841
291	20	37,732	12,068	85,301	1,052,778	169,193	399	209	1,242	5,078			



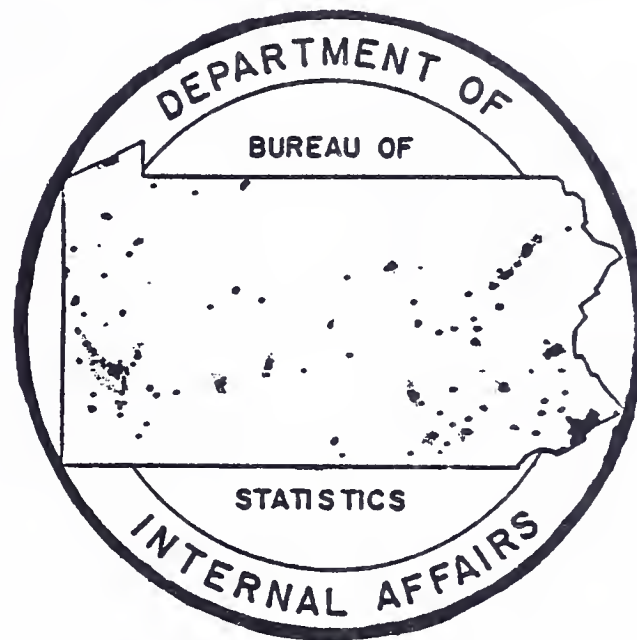




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S-15

JUL 22 1965

# LISTING OF MANUFACTURING COMPANIES WITH ONE THOUSAND OR MORE EMPLOYEES IN PENNSYLVANIA : 1962



Release No. S-15

June 1965

Department of Internal Affairs  
Genevieve Blatt, Secretary

Bureau of Statistics  
Emmett Welch, Director  
Elmer Larson, Asst. Director



## LIST OF PUBLICATIONS PREPARED BY THE BUREAU OF STATISTICS

NOTE: All charge publications should be purchased directly from the Division of Documents, Post Office Box 1763, Harrisburg, Pennsylvania. Pennsylvania residents please add five percent state sales tax to all orders. A check or money order payable to the Commonwealth of Pennsylvania should accompany each order. Free publications can be obtained directly from the Bureau of Statistics, Department of Internal Affairs, Harrisburg, Pennsylvania.

### A. CHARGE PUBLICATIONS

#### 1. 1964-65 PENNSYLVANIA STATISTICAL ABSTRACT

Statistics, explanatory notes, definitions, and information on statistical sources are presented in 30 subject sections: Population, Income, and Religion; Vital Statistics; Accidents; Education; Labor Force, Employment, and Earnings; Prices; Housing; Social Insurance, Financial Assistance, and Veterans' Benefits; Welfare Services and Resources; Hospitals, Medical Care, and Rehabilitation; Mental Health; Crime and Law Enforcement; Courts and Law; Correction and Parole; Elections, Legislation, and Legislators; State Government; Local Government; Climate; Natural Resources and Conservation; Parks and Recreation; Area and Industrial Development; Agriculture; Mineral Industries; Construction; Manufacturing; Transportation; Communications and Public Utilities; Business and Trade; Banking and Finances; Foreign Commerce.

There are 241 tables and 38 graphs and map diagrams, 353 pages. Price \$1.50 plus 8¢ state sales tax. (Copies for the years 1959-63 are still available at a price of \$1.50 plus 8¢ state sales tax and for 1958 at a price of \$1.00 plus 5¢ state sales tax.)

#### 2. THE 1965 INDUSTRIAL DIRECTORY OF THE COMMONWEALTH OF PENNSYLVANIA (17th Edition)

Published every three years with supplements for the two years between Directories. County Section - The names of all manufacturing establishments in each county are listed alphabetically within four-digit Standard Industrial Classifications (Revised SIC). The following information is shown for each establishment: plant location, office mailing address (if different than plant location), and number of employees. Industry Section - This section includes an alphabetical listing of all establishments within four-digit industrial classifications. The county location and the office mailing address is shown for each establishment. 511 pages. Price \$7.50 plus 38¢ state sales tax.

#### 3. PENNSYLVANIA MUNICIPAL AUTHORITIES DIRECTORY

Contains the names, addresses, dates of incorporation, and dates and amounts of bond issues for all municipal authorities in Pennsylvania. (1965 edition) Price \$1.00 plus 5¢ state sales tax.

#### 4. POPULATION AND AREA OF MUNICIPALITIES IN PENNSYLVANIA (S-9)

County map diagrams showing municipalities with area in square miles and 1950 and 1960 Census population figures. Ward population figures are given for Philadelphia, Pittsburgh, Erie, and Scranton. 70 pages. Price \$1.00 plus 5¢ state sales tax.

### B. FREE PUBLICATIONS

#### 5. MANUFACTURING STATISTICS

(Based on the annual Pennsylvania Industrial Census.)

M-1 1963 Statistics for Manufacturing Industries in Pennsylvania (also 1958, 1960, and 1962)  
M-2 1963 Statistics By Major Industry Group for Counties and Urban Places (also 1957 and 1962)  
M-3 Statistics for Urbanized Areas (discontinued after 1962)  
M-4 1963 General Statistics By Industry and By Size of Establishment (also 1957 to 1960, and 1962)  
M-5 (MC-64) 1964 County Industry Reports (Separate report for each county; includes data for political sub-divisions covering 1964 manufacturing statistics for individual industries.) - also 1961 to 1963.  
M-6 (FT-63) Exports By Pennsylvania Manufacturing Companies: 1963 (also 1961 and 1962)  
M-7 Directory of Pennsylvania Manufacturing Exporters: 1963 This directory is an alphabetical listing of all Pennsylvania manufacturing establishments exporting in 1961, their addresses, and a listing of products exported by each -- also lists all exporting establishments under each manufactured product exported.  
M-8 1963 Statistics for Selected Pennsylvania Standard Metropolitan Statistical Areas. This report provides statistics for (SMSA's) containing more than one county.

#### 6. PUBLIC UTILITY STATISTICS

(Based on the annual Census of Public Utilities in Pennsylvania)

U-1 Statistics for Electric Utilities in Pennsylvania, 1963 (also 1956 to 1960 and 1962)  
U-2 Statistics for Gas Utilities in Pennsylvania, 1963 (also 1956 to 1962)  
U-3 Statistics for Telephone Utilities in Pennsylvania, 1963 (also 1956 to 1962)  
U-4 Statistics for Water Utilities Including Water Authorities in Pennsylvania, 1963 (also 1956 to 1962)  
U-5 Statistics for Sewer Authorities in Pennsylvania, 1963 (also 1956 to 1962)  
U-6 Statistics for Motor Bus and Electric Transportation Companies in Pennsylvania, 1963 (also 1956, 1958 to 1960, and 1962)

#### 7. MUNICIPAL AUTHORITY STATISTICS

A-1 1957 Statistics for Municipal Authorities  
A-1 1958 Statistics for Municipal Authorities  
A-63 1963 Statistics for Municipal Authorities (also 1959 and 1962)

#### 8. INCOME AND POPULATION STATISTICS

I-1 Pennsylvania's Personal Income by Type and County for Selected Years, 1929-1960 (Superseded by IP-1)  
IP-1 Pennsylvania's Personal Income and Population by County For Selected Years, 1929-1963

#### 9. SPECIAL RELEASES

S-2 Industrial Statistics for Pennsylvania, 1951 to 1955  
S-5 Mineral Statistics for Pennsylvania, 1957  
S-8 Reapportionment in Pennsylvania (Revised 1965)  
S-10 Employment by Broad Industry Groups and by County for Selected Years: 1919-1961  
S-11a Economic Base Studies for Urban Planning and Development in Pennsylvania (A description and evaluation of such studies in Pennsylvania--by Morris Hamburg, University of Pennsylvania)  
S-11b An Evaluation of Selected Data Requirements and Availability for Urban Economic Planning and Development in Pennsylvania--by Morris Hamburg and John H. Norton, University of Pennsylvania  
S-11c Selected Methods of Analysis for Urban Economic Planning and Development in Pennsylvania: Commentary on Regional Economic Accounting Systems, Benefit-Cost Analysis and Statistical Decision Theory--by Morris Hamburg and Thomas W. Langford, Jr., Wharton School of Finance and Commerce, University of Pennsylvania  
S-12(LFC) County Labor Force Report - These reports contain information on employable age population, labor force, unemployment, occupations, and industrial attachment for the cities, boroughs, and townships in fifty-one (51) counties. The data in these reports are not available from any other source. Not included are 16 counties for which similar information is available in the Census Tract publications of the U. S. Bureau of the Census.

S-13 Pennsylvania Scientific and Technical Personnel, 1962  
S-14 Comparable Statistics for Manufacturing Industries in Pennsylvania: 1916-1962

### C. OUT OF PRINT PUBLICATIONS

These out-of-print publications are listed because copies of many of these reports are available for reference in public, university, and college libraries.

Pennsylvania Productive Industries - These publications include information on manufacturing, public utilities, and mineral industries for the years 1916 to 1950.  
Index of Statistical Sources for Pennsylvania (Editions in 1955, 1957, 1959, 1960, and 1961)  
P-1 County and City Population Estimates for Pennsylvania  
P-2 County Population Estimates for Penna. by Age and Sex  
P-3 County Population Estimates -- Notes on Methodology  
P-4 Local Population Estimates in Pennsylvania  
S-1 Leading Manufacturing Counties in Pennsylvania  
S-3 Industrial Statistics for Pennsylvania, 1916 to 1956  
S-4 Capital Investment for Manufacturing and Mining Industries in Pennsylvania, 1956

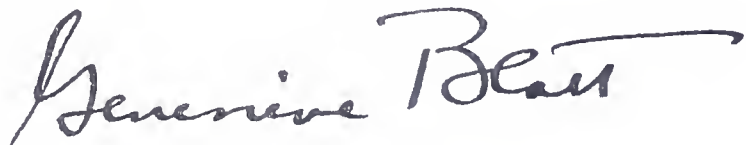
S-6 Manufacturing Employment in Urban, Suburban, and Rural Places in Pennsylvania, 1960  
S-7 Mineral Statistics for Pennsylvania, 1958-1959  
56-5 Shifts in the Geographic Location of Pennsylvania Industry, 1920-1955

## FOREWORD

This is a new publication of the Bureau of Statistics, Department of Internal Affairs. It is based on the Annual Industrial Census conducted by the Bureau of Statistics and contains an alphabetical listing of all manufacturing companies with one thousand or more employees in Pennsylvania establishments in 1962. This report was compiled in response to the many requests received for this type of information.

The name and mailing address of the parent company is given in addition to the location of each manufacturing establishment located in Pennsylvania. Employment figures are shown for each establishment with a total for each parent company. The detailed Standard Industrial Classification Industry Code (four digit) is given for each establishment.

This report reflects our continuing efforts to make the information we collect more useful to its users.

A handwritten signature in dark ink, reading "Genevieve Blatt". The signature is fluid and cursive, with a long horizontal flourish extending from the end of the name.

Genevieve Blatt

Secretary of Internal Affairs





Plant No.	Name and address of company and plant location	Employment	Product	Value of production in 1962
3742	American Car & Foundry Div., 9th & Oak Sts., Berwick (discontinued operations in 1962)	1,748	3322	3481
3742	American Car & Foundry Div., 2nd & Arch Sts., Milton	551	3536	
3742	Shipper's Car Line Div., 2nd & Arch Sts., Milton	108	3315	3203
	A M P, Inc., Eisenhower Bldg., Harrisburg 17105	584	3253	
3423	Sellingsgrove	132		
3643	Carlisle	211		
3643	1523 N 4th St. Harrisburg	149		
3643	Williamstown	19		
3643	Mount Joy	198		
3643	Glen Rock	139		
3679	Elizabethtown	150		
	Air Products & Chemicals, Inc., P. O. Box 538, Allentown 18105	1,859		
2813	Creighton	21		
2813	Clairton	1		
2813	Alliquippa	31		
2813	Oak Lane & B. & O. R. R., Collingdale	10		
3569	Route 222, Trexlertown	1,472	3211	
3569	Old River Rd., Hanover	212	3211	
3569	1744 Lehigh St., Allentown	54	3211	
3569	K G M Equipment Co., 744 Lehigh St. Allentown	49		
	Allegheny Chemicals, Inc. 150 E. 42nd St., New York, N. Y. 10017	1,614	3821	
	1116 Ridge Ave., Pittsburgh (discontinued operations in 1962)	14		
	10th & Railroad Ave., Midland (discontinued operations in 1962)	0		
2813	Route 22 Bypass, Hollidaysburg	3		
3569	Clinton Ave., Butler	37		
3569	Main St. & Chambers Run Rd., Johnstown (discontinued operations in 1962)	18		
3569	829 Paxton St., Harrisburg (discontinued operations in 1962)	20		
2813	DeKalb St., Bridgeport	15		
3679	Speer Carbon Co. Div., Hoover Ave., DuBois	173		
3624	Speer Carbon Co. Div., Theresa St., St. Marys	769		
3624	Speer Carbon Co. Div., Elk Run	79		
3679	Speer Carbon Co. Div., Seward Ave., Bradford	404		
	Allegheny Ludlum Steel Corp., 2020 Oliver Bldg., Pittsburgh 15222	5,706		
3316	West Leechburg	2,177		
3312	Harrison Twp.	3,529		
3312	Alan Wood Steel Co., Conshohocken 19428	2,752		
	Allied Chemical Corp., 40 Rector St., New York, N. Y. 10006	1,940		
3662	Barrett Div., 36th St. & Grays Ferry Ave., Philadelphia	265		
3661	Barrett Div., Front & Susquehanna Sts., Sunbury	229		
2815	Plastics Div., Margaret & Bermuda Sts., Philadelphia	888		
2814	Plastics Div., Coke Works Rd., Bethlehem	14		
2819	General Chemical Div., Wilmington Turnpike, Marcus Hook	402		
2819	General Chemical Div., Ridgeway Rd., Johnsonburg	3		
2819	General Chemical Div., Mill St., Newell	139		
	Allis-Chalmers Mfg. Co., 500 Lincoln St., York 17404	1,384		
3511	500 Lincoln St., York	751		
3511	E. Berlin Rd., W. Manchester Twp.	279		
	Aluminum Co. of America, 1501 Alcoa Bldg., Pittsburgh 15219	307		
3399	Logans Ferry Rd., Plum	56		
3452	Fruitville Pike, Lancaster	24		
3352	Cressona	1,240		
3352	New Kensington	664		
	American Can Co., 140 Park Ave., New York, N. Y. 10017	2,107		
3411	221 S. 10th St., Lemoyne	242		
2654	Upper Gwynedd Twp.	71		
2654	24th St. & Dixie Ave., Easton	1,831		
3411	Blair & Pottsville Sts., Philadelphia	1,000		
	American Chain & Cable Co., Inc., 929 Connecticut Ave., Bridgeport, Conn. 06607	3,563		
3391	1st St. & P. & L. E. R. R. Braddock	120		
3494	Tulpehocken St. & L. V. R. R., Reading	801		

## LISTING OF COMPANIES WITH ONE THOUSAND OR MORE EMPLOYEES IN 1962 (continued)

Industry code	Name and address of company, and establishment location	Employment	Industry code	Name and address of company, and establishment location	Employment
3729	Bendix Corp., 1104 Fisher Bldg., Detroit, Michigan 48202	1,268		Carrier Corp., Carrier Parkway, Syracuse, New York	2,405
3729	Montrose Div., South Montrose York Div., Lincoln Highway, Stonybrook	653 615	3444	Carrier Air Conditioning Co., 185 W. Wyoming Ave., Philadelphia	41
	Bethlehem Steel Co., 701 E. 3rd St., Bethlehem 18015	33,470	3621	Elliott Co., River St., Ridgeway	537
3441	W. Braddock Ave., Rankin	549	3564	Elliott Co., N. 4th St., Jeannette	1,827
3441	Center Ave., Leetsdale	335	3351	Cerro Copper & Brass Co., Div. - Cerro Corp., Bellefonte 16823	1,172
3312	119 Walnut St., Johnstown	9,794	2721	Chilton Co., 5601 Chestnut St., Philadelphia 19139	1,233
3742	119 Walnut St., Johnstown	746		Cluett Peabody & Co., Inc. 433 River St., Troy, New York 12180	1,599
3441	Venango & G Sts., Philadelphia	41	2321	1221 W. 3rd St., Williamsport	213
3312	Front & Swatara Sts., Steelton	2,629	2321	407 S. Main St., Lewistown	604
3441	Front & Swatara Sts., Steelton	765	2321	Franklin St., Shamokin	782
3452	Lincoln & Cumberland Sts., Lebanon	2,063			
3481	Campbell St., Williamsport	994	2311	Cohen & Sons, Inc., Joseph H., Broad St. & Lehigh Aves., Philadelphia	2,023
3441	S. Keim St., Pottstown	1,440			
3295	701 E. 3rd St., Bethlehem	35			
3312	701 E. 3rd St., Bethlehem	13,364			
3441	701 E. 3rd St., Bethlehem	715			
	Berkshire International Corp., P. O. Box 1259, Reading 19603	1,937		Consolidated Cigar Corp., 529 5th Ave., New York, N. Y. 10017	2,196
2251	Hill Ave. & Park Rd., Wyomissing	1,640	2121	16 Delaware Ave., West Pittston	956
2251	2nd & Weidman St., Lebanon	297	2121	S. Main & Dana Sts., Wilkes-Barre	416
	Bestform Foundations, Inc., 38-01 47th Ave., Long Island City, New York 10001	1,002	2121	Mulberry & 11th Sts., Berwick	675
2342	Bestform Foundations of Pennsylvania, Inc., Baumer & Cherry Sts., Johnstown	484	2441	S. Elkeles Cigar Box Co., 120 Front St., Quakertown	29
2342	Bestform Foundations of Windber, Inc., Stockholm Ave., Windber	518	3591	Flinchbaugh Products, Inc., Redco Ave., Red Lion	120
3548	Birdsboro Corp., Furnace St., Birdsboro 19508	1,265	2651	Container Corp. of America, 38 S. Dearborn St., Chicago, Illinois 60603	1,884
	Blaw-Knox Co., 300 6th Ave., Pittsburgh 15222	4,860	2631	Port Providence 5000 Flat Rock Rd., Philadelphia	521 1,363
3323	Foundry & Mill Machinery Div., 62nd & Butler Sts., Pittsburgh	868		Continental Can Co., Inc., 633 3rd Ave., New York, N. Y. 10017	3,694
3323	National Alloy Div., Blawnox	229	2653	Corrugated Container Div., 9820 Blue Grass Rd., Philadelphia	116
3441	Equipment Div., Blaw Ave., Blawnox	907	3411	Route 885, W. Mifflin	978
3548	Lewis Works, Lewis Ave., Scranton	206	3461	Bond Crown Div., Route 885, W. Mifflin	71
3498	Power Piping Div., 829 Beaver Ave., Pittsburgh	733	2655	720 Laurel St., Reading	399
3323	Coraopolis Works, Narrows Run Rd., Coraopolis	512	2643	Lincoln Highway, Devon	209
3321	Rolls Works, 41st & Willow Sts., Pittsburgh	217	3411	70 Race St., Milton	53
3548	Aetna-Standard Div., Park Ave. & 2nd St., Ellwood City	740	3411	15 Mineral St., Oil City	135
3564	Copes-Vulcan Div., 939 W. 26th St., Erie	448	3221	Euclid & Griffith Sts., Washington	900
			3229	331 S. Main St., Washington	833
3721	Boeing Co., Vertol Div., 100 Woodland Ave., Morton 19070	5,893	3519	Cooper-Bessemer Corp., Lincoln Ave., Grove City 16127	1,926
	Borg Warner Corp., 200 S. Michigan Ave., Chicago, Illinois 60604	2,620	3229	Corning Glass Works, Houghton Park, Corning, New York 14832	2,717
3312	Franklin Steel Div., 601 Atlantic Ave., Franklin	318	3679	Greencastle	323
3585	York Div., Grantley Rd., York	2,274	3229	550 High St., Bradford	947
3651	Amnitronics, Inc., 511 N. Broad St., Philadelphia	28	3229	Charleroi	868
	Brockway Glass Co., Inc., Wood St., Brockway 15824	2,216		1 Jackson St., Wellsboro	579
3221	Snyder Twp	961	3589	Crane Co., 300 Park Ave., New York, N. Y. 10022	1,238
3221	Wiley Ave. & Connecting Rd., Canton Twp.	614	3433	17th St., Philadelphia	236
3221	Brockway	641	3433	Duncansville	191
	Budd Co., 2450 Hunting Park Ave., Philadelphia 19129	5,996	3321	300 W. Water St., Middletown	291
3742	Red Lion & Verree Rds., Philadelphia	567	3443	Cass St., New Castle	452
3714	2450 Hunting Park Ave., Philadelphia	4,531		Stowe	68
3714	Red Lion & Verree Rds., Philadelphia	898	3411	Crown Cork & Seal Co., Inc., 9300 Ashton Rd., Philadelphia 19136	1,613
2711	Bulletin Co., Market & 30th Sts., Philadelphia 19101	2,378	3411	9300 Ashton Rd., Philadelphia	952
	Burroughs Corp., 6071 Second Ave., Detroit, Michigan 48232	1,999		Erie Ave. & H St., Philadelphia	661
3571	Burroughs Laboratories, Central Ave., Paoli	1,464		Crucible Steel Co. of America, P. O. Box 88, Pittsburgh 15230	6,388
2761	Todd Div., 175 Commerce Drive, Fort Washington	122	3493	1 McCandless Ave., Pittsburgh	136
3679	Electronic Instruments Div., 1209 Vine St., Philadelphia	413	3312	Midland	6,252
	Byers Co., A. M., P. O. Box 269, Ambridge 15003	1,038	2751	Cuneo Eastern Press, Inc., Erie Ave. & F St., Philadelphia 19132	1,435
3317	6th & Bingham Sts., Pittsburgh	260		Curtis Publishing Co., Independence Sq., Philadelphia 19105	9,395
3312	Duss Ave., Harmony	436	2721	Independence Sq., Philadelphia	5,203
3069	Castle Rubber Co., East Butler	342	2721	Sharon Hill	1,928
3631	Caloric Appliance Corp., Topton 19562	1,108	2621	New York & Pennsylvania Co., Inc., Lock Haven	305
3312	Carpenter Steel Co., 101 W. Bern St., Reading 19601	2,699	2621	New York & Pennsylvania Co., Inc., Lock Haven	925
			2621	New York & Pennsylvania Co., Inc., 100 W. Center St., Johnsonburg	1,034
				Dana Corp., 4100 Bennett Rd., Toledo, Ohio 43612	3,034
			3717	Robeson & Weiser Sts., Reading	2,159
			3717	125 S. Keim St., Pottstown	875
				Daroff & Sons, Inc., H., 2300 Walnut St., Philadelphia 19103	2,561
			2311	2300 Walnut St., Philadelphia	2,053
			2327	Dublin Pants Co., Dublin	211
			2327	Perkasie Clothing Mfg. Co., 420 Race St., Perkasie	109
			2327	Pennsburg Clothing Mfg. Co., 301-4th St., Pennsburg	188







## LISTING OF COMPANIES WITH ONE THOUSAND OR MORE EMPLOYEES IN 1962 (continued)

Industry code	Name and address of company, and establishment location	Employment	Industry code	Name and address of company, and establishment location	Employment
	H. J. Heinz Co., 1062 Progress St., Pittsburgh 15212	2,007		Leeds & Northrup Co., 4901 Stenton Ave., Philadelphia 19144	2,634
2032	1062 Progress St., Pittsburgh	1,610	3821	Sumneytown Pike, North Wales	1,341
2032	W. Commerce St., Chambersburg	397	3611	4901 Stenton Ave., Philadelphia	1,236
			3613	Thomas S. Gassner Co., Inc., 152 Wapsley St., Philadelphia	57
2072	Hershey Chocolate Corp., 19 E. Chocolate Ave., Hershey 17033	3,723		Link-Belt Co., Prudential Plaza, Chicago, Illinois 60601	1,968
	Heppenstall Co., 4620 Hatfield St., Pittsburgh 15201	2,281	3566	2045 Hunting Park Ave., Philadelphia	830
3312	4620 Hatfield St., Pittsburgh	781	3535	3400 Walnut St., Hatfield	548
3537	16th St., New Brighton	57	3535	Syntrone Co., Homer City	590
3391	Midvale-Heppenstall Co., 4320 Wissahickon Ave., Philadelphia	1,443		Litton Industries, Inc., 336 N. Foothill Rd., Beverly Hills, California	1,548
	I T E Circuit Breaker Co. - Greensburg Div., 1900 Hamilton St., Philadelphia 19130	3,956	2522	Masell Mfg. Corp., Albemarle & Hays St., York	178
3613	Theobald Ave., South Greensburg	668	2522	Masell Mfg. Corp., Loucks Mill Rd., York	712
3613	1900 Hamilton St., Philadelphia	3,288	2522	Pronto File Corp., Loucks Mill Rd., York	7
			2751	Eureka Specialty Printing Co., 530 Electric St., Scranton	651
	Ingersoll-Rand Co., 11 Broadway, New York, N. Y. 10004	1,933		Lord Manufacturing Co., 1635 W. 12th St., Erie 16505	1,163
3548	101 N. Main St., Athens	1,469		1635 W. 12th St., Erie	1,148
3499	Main Gate, Easton	179	3069	Hughson Chemical Co., Div., South St. & Erie R. R., Saegertown	15
3321	Athens Foundry Corp., 101 N. Main St., Athens	91	2818		
3561	Aldrich Pump Co., Pine St., Allentown	194			
3312	Jessop Steel Co., 500 Green St., Washington 15301	1,174	3312	Lukens Steel Co., S. 1st Ave., Coatesville 19320	4,621
3566	Johnson Bronze Co., 500 S. Mill St., New Castle 16101	1,219	3717	Mack Trucks, Inc., 601 S. 10th St., Allentown 18100	3,293
	Jones & Laughlin Steel Corp., 3 Gateway Center Pittsburgh 15230	22,608	2271	Magee Carpet Co., 480 W. 5th St., Bloomsburg 17815	1,715
3312	Pittsburgh Works Div., 2709 E. Carson St., Pittsburgh	9,189		Marx & Co., Louis, 200 5th Ave., New York, N. Y.	1,427
3312	Allquippa Works Div., Aliquippa	12,915	3941	Girard Mfg. Co., Penn Ave. Ext., Girard	669
3491	Container Div., 416 Steel Way, Lancaster	29	3941	Marx & Co. Inc. of Pa., Louis, 1816 Raspberry St., Erie	758
3481	Wire Rope Div., West Penn St., Muncy	216			
3491	Container Div., 3711 Sepviva St., Philadelphia	56	2272	Masland & Sons, C. H., Spring Rd., Carlisle 17013	1,108
3317	Electricweld Tube Div., 363 Seneca St., Oil City	203		McGraw-Edison Co., 1200 St. Charles Rd., Elgin, Illinois	1,993
3532	Joy Manufacturing Co., 325 Buffalo St., Franklin 16323	1,144	3567	Rectro Products Div., 32nd St. & A. V. R. R., Pittsburgh	400
	Kelsey-Hayes Co., 38481 Huron River Dr., Romulus, Michigan	1,057	3644	Line Material Industries, N. Burson St., E. Stroudsburg	229
3714	Helntz Div., Front St. & Olney Ave., Philadelphia	1,057	3612	Pennsylvania Transformer Div., P. O. Box 30, Canonsburg	1,364
	Kennametal, Inc., 1 Lloyd Ave., Latrobe 15650	1,410		Merck & Co., Inc., 126 E. Lincoln Ave., Rahway, N. J. 07065	2,622
3532	Mining Tool Div., Chalybeate Springs Rd., Bedford	165	2833	Riverside	901
3545	1 Lloyd Ave., Latrobe	1,228	2834	Merck Sharp & Dohme Div. - Merck & Co., Inc., Sumneytown Pike & Broad St., West Point	1,095
3544	Armwall, Inc., Old U. S. Route 22, Murrysburg	17	2834	Merck Sharp & Dohme Div., 640 N. Broad St., Philadelphia	626
	Keystone State Shoe Co., Inc., Sales Bldg., Endicott, N. Y. 13760	1,054		Mesta Machine Co., P. O. Box 1466, Pittsburgh 15230	3,363
3131	Linden St., Scranton	107	3548	Seventh Ave., West Homestead	2,671
3141	Archbald	251	3548	George & Moravia Sts., New Castle	692
3141	Mildred	151		Mine Safety Appliances Co., 201 N. Braddock Ave., Pittsburgh 15208	1,506
3141	Tunkhannock	291		Homewood	1,242
3141	Forest City	254		Gallery	264
	Klnney Corp. G. G., 221 Park Ave. South, New York, N. Y.	1,164	3842		
3141	J. Landis Shoe Co., Broad & Chestnut Sts., Palmyra	299	3842		
3141	Bedford Shoe Co., Orange St., Carlisle	358		Minneapolis-Honeywell Regulator Co., 2755 4th Ave. South, Minneapolis, Minnesota	3,428
3141	Johnson-Baillie Shoe Co., Wiconisco Ave. Millersburg	405	3622	Special Systems Div., Queen & S. Bailey Sts., Pottstown	537
3141	Beaver Shoe Co. Div. of Johnson-Baillie Shoe Co., Beaver Springs	102	3494	Valve Div., 300 Commerce Dr., Ft. Washington	286
	Koppers Co., Inc., 430 7th Ave., Pittsburgh 15219	1,300	3611	Rubicon Div., Ridge Ave. & 35th St., Philadelphia (discontinued business in 1962)	128
2818	Tar Products Div., Rouseville Rd., Oil City	85	3821	Brown Instrument Div., Wayne & Windrin Ave., Philadelphia	2,477
2814	Tar Products Div., River Rd., Norristown	7		National Biscuit Co., 425 Park Ave., New York, N. Y. 10022	2,459
2821	Plastics Div., Monaca	663	2051	6417 Penn Ave., Pittsburgh (discontinued business in 1962)	155
2818	Chemical & Dyestuffs Div., Petrolia	204	2052	6425 Penn Ave., Pittsburgh	613
2815	Chemical & Dyestuffs Div., Mt. Vernon St., Lock Haven	329	2043	2622 W. 4th St., Chester	88
2491	Wood Preserving Div., Adelaide	12	2054	419 S. Patterson St., York	133
			2052	Roosevelt Blvd. & Byberry Rd., Philadelphia	1,470
3312	Latrobe Steel Co., 2626 S. Ligonier St., Latrobe 15650	1,702		National Dairy Products Corp., 260 Madison Ave., New York, N. Y. 10016	1,977
3011	Lee National Corp., Hector St. Ext., Conshohocken 19428	1,201	2026	Sealtest Foods Div., 901 Green Ave., Altoona	96
			2026	Sealtest Foods Div., Beaver St., Springboro	21
			2023	Sealtest Foods Div., State Rt. 8, Centerville	15

## LISTING OF COMPANIES WITH ONE THOUSAND OR MORE EMPLOYEES IN 1962 (continued)

Industry code	Name and address of company, and establishment location	Employment	Industry code	Name and address of company, and establishment location	Employment
2026	National Dairy Products Corp. (Cont'd)				
	Sealtest Foods, Eastern Div., Chambersburg	32	3642	Progress Mfg. Co., Inc., Castor Ave. & Tulip St., Philadelphia	1,318
2024	Sealtest Foods Div., 4634 Browns Hill Rd., Pittsburgh	175	3351	Castor Ave. & Tulip St., Philadelphia	816
2026	Sealtest Foods Div., 2121 Noblestown Rd., Pittsburgh	438	3351	Reading Tube Div., 57th & South St., Reading	361
2024	Sealtest Foods, Eastern Div., 15 S. 34th St., Philadelphia	166	3341	Readi-Fin Mfg. Co., Inc., 1630 N. 9th St., Reading	37
2026	Sealtest Foods, Eastern Div., 5501 Tabor Ave., Philadelphia	595		Reading Metals Refining Corp., P. O. Box 1111, Reading	104
2024	Breyer Ice Cream Div., 43rd St. & Woodland Ave., Philadelphia	383	2321	Publix Shirt Corp., 350 5th Ave., New York, N. Y. 10001	1,325
2037	Breyer Ice Cream Div., Greencastle	39	2321	E. Main & N. Cherry St., Myerstown	305
2023	Breyer Ice Cream Div., Millerstown	17	2321	Pine St. & Oak St., Hazleton	715
				Publix Mfg. Corp., St. Thomas & Donough St., Gallitzin	305
3341	National Lead Co., 111 Broadway, New York, N. Y.	1,346		Pullman, Inc., 200 S. Michigan Ave., Chicago, Illinois	1,808
2816	1376 River Ave., Pittsburgh	50	3742	Pullman-Standard Div., Hansen Ave., Butler	1,128
3361	2545 Aramingo Ave., Philadelphia	273	3498	M. W. Kellogg Co., Reach Rd., Williamsport	250
	Doehler-Jarvis Div., Washington & Apple Sts., Pottstown	1,023	3567	Swindell-Dressler Corp., Freeport Rd., Pittsburgh	430
2062	National Sugar Refining Co., 100 Wail St., New York, N. Y.	1,088	2253	Puritan Sportswear Corp., The, 813 Twenty-fifth St., Altoona 16603	1,167
	Pennsylvania Sugar Div., 1037 N. Delaware Ave., Philadelphia	1,088			
3333	New Jersey Zinc Co. of Pennsylvania, Palmerton 18071	1,722	3672	R C A, 30 Rockefeller Plaza, New York, N. Y. 10020	5,137
			3662	New Holland Pike, Lancaster	3,787
2653	Owens-Illinois Glass Co., P. O. Box 1035, Toledo, Ohio 43601	1,563	3679	Chartiers Twp., Washington	830
2653	Forest Products Div., State Rd., Bristol	314	3671	Crestwood Rd., Mountaintop	487
	Forest Products Div., P. O. Box 217, Bradford	220		R C A Service Co., Telford Rd., Sellersville	33
3221	Glass Container Div., Clarion	943	3822	Robertshaw-Fulton Controls Co., 1701 Byrd Ave., Richmond, Virginia 23215	1,713
3079	Consumer & Technical Products Div., 100 Keystone Drive, Lake City	86	3822	S. 13th St. Ext., Indiana	442
				Hempfield Twp.	1,271
2033	Pet Milk Co., P. O. Box 392, Saint Louis, Missouri 63166	2,240	2821	Rohm & Haas Co., 222 W. Washington Sq., Philadelphia 19105	5,227
2033	Musselman Div., Biglerville	486	2821	Bristol	2,623
2037	Musselman Div., Gardners	278		5000 Richmond St., Philadelphia	2,604
2071	Frozen Foods Div., 225 W. Vine St., Chambersburg	86	2361	Rosenau Bros., Inc., Fox St. & Roberts Ave., Philadelphia 19129	1,497
	Whitman Div., 9700 Roosevelt Blvd., Philadelphia	1,390	2361	Fox St. & Roberts Ave., Philadelphia	645
			2361	Ephrata Apparel Co., Fulton St., Ephrata	190
3651	Philco Corp., Tlaga & C Sts., Philadelphia 19134	13,997	2361	Lansford Apparel Co., W. Patterson St., Lansford	472
3662	Consumer Products Div., C & Tlaga Sts., Philadelphia	3,908		Red Hill Apparel Co., Main St., Red Hill	190
3679	Communications & Electronics Div., 4700 Wissahickon Ave., Philadelphia	3,405	3562	S K F Industries, Inc., Front St. & Erie Ave., Philadelphia 19132	4,513
3679	Lansdale Div., S. Main St., Spring City	1,576	3562	Plank Rd. & Logan Blvd., Altoona	511
3571	Lansdale Div., Church Rd., Lansdale	3,245	3562	W. King St., Shippensburg	284
	Computer Div., 3900 Welsh Rd., Willow Grove	1,204	3562	Front St. & Erie Ave., Philadelphia	2,909
2511	Consumer Products Div., 601 Liberty St., Watsontown	659		Nice Ball Bearing Co., Detweiler & Gehman Rds., Kulpsville	61
			3333	Nice Ball Bearing Co., 30th & Hunting Park Ave., Philadelphia	748
2331	Philips-Van Heusen Corp., 417 5th Ave., New York, N. Y. 10016	1,365		Saint Joseph Lead Co.-Zinc Smelting Div., Josephtown 15061	1,122
2321	Lady Van Heusen Inc., 232 N. 11th St., Philadelphia	166			
2321	Maple Ave., Barnesboro	221	2311	Schoenman, Inc. J., 412 W. Redwood St., Baltimore, Maryland 21201	2,712
2321	Beech St., Patton	235	2311	4th & McKinley Sts., Chambersburg	2,053
2321	16th St. & Mt. Hope Ave., Pottsville	552	2327	South Front St., Souderton	382
2253	200 Ruddle St., Coaldale	123	2231	2nd & Towamencin Ave., Lansdale	122
	22 E. Sunberry St., Minersville	68		Vernon Textile Co., 4201 Torresdale Ave., Philadelphia	155
3721	Piper Aircraft Corp., 820 E. Bald Eagle St., Lock Haven 17745	1,603	2621	Scott Paper Co., Front & Market Sts., Chester 19013	2,158
3443	Pittsburgh-Des Moines Steel Co., 3400 Grand Ave., Pittsburgh 15225	1,391	3312	Sharon Steel Corp., Roemer Blvd., Farrell 16121	4,826
3443	3400 Grand Ave., Neville	998	3310	Roemer Blvd., Farrell	4,802
3443	2nd St. & Delaware Ave., Bristol	160	3262	Carpentertown Coal & Coke Co., Templeton	24
	1420 Lexington Ave., Warren	233			
3211	Pittsburgh Plate Glass Co., 1 Gateway Center, Pittsburgh 15222	4,394		Shenango Ceramics, Inc., Glass St., New Castle 16103	1,066
2851	Ferry St., Creighton	1,576	3312	Shenango, Inc., P. O. Box 3030, Pittsburgh 15230	1,161
3231	Ferry St., Creighton	173	3312	1500 Grand Ave., Neville Island	433
3211	125 Colfax St., Springdale	212	3312	Neville Island	268
3211	Third Ave., Ford City	439	3310	Sharpville	420
3211	Third Ave., Ford City	1,522		Lucerne Coke Co., Lucerne Mines	40
3231	Oakland Ave., Indiana	18	2911	Sinclair Refining Co., Post Rd., Trainer 19061	1,251
2821	Huff Ave., S. Greensburg	394			
	Preble Ave., Pittsburgh	60		Smith, Kline & French Laboratories, 1500 Spring Garden St., Philadelphia 19130	2,652
2711	Pittsburgh Press Co., 34-52 Boulevard of Allies, Pittsburgh 15230	1,976	2834	1530 Spring Garden St., Philadelphia	2,578
			2834	3709 Swedeland Rd., Upper Merion	74
3312	Pittsburgh Steel Co., P. O. Box 118, Pittsburgh 15230	6,329	3571	Sperry Rand Corp., 30 Rockefeller Plaza, New York, N. Y.	2,744
3312	Allenport	2,533	3522	Univac Div., 19th & Allegheny Ave., Philadelphia	721
	1200 Schoonmaker Ave., Monessen	3,796		New Holland Machine Co., 723 Prince St., Lancaster	280



## LISTING OF COMPANIES WITH ONE THOUSAND OR MORE EMPLOYEES IN 1962 (continued)

Industry code	Name and address of company, and establishment location	Employment	Industry code	Name and address of company, and establishment location	Employment
3522	Sperry Rand Corp. (Cont'd)		3714	U. S. Asbestos Div. of Raybestos - Manhattan Inc., Manheim	1,333
3522	New Holland Machine Co., 100 Franklin St., New Holland	1,277			
3522	New Holland Machine Co., Maple St., Belleville	398		United States Steel Corp., 525 William Penn Place, Pittsburgh 15230	44,874
3522	FARMEC, Intercourse	68	3242	Penn Hills	130
	Stackpole Carbon Co., 201 Stackpole St., Saint Marys 15857	3,406	3311	420 State St., Clairton	3,612
3624	201 Stackpole St., Saint Marys	2,353	3312	1 Liberty Place, Duquesne	4,442
3622	Kane	612	3312	West Mifflin	3,709
3624	Pure Carbon Co., Inc., 441 Hall Ave., Saint Marys	385	3312	Braddock Ave., Braddock	2,890
3624	Pure Carbon Co., Inc., Route 6, Coudersport	56	3312	8th Ave., Munhall	7,690
			3312	Graham St., McKees Rocks	533
3452	Standard Pressed Steel Co., Highland Ave., Jenkintown 19046	3,342	3312	415 4th Ave., McKeesport	4,691
	Stetson Co., John B., Montgomery Ave. & 5th St., Philadelphia 19122	1,528	3312	West Braddock Ave., Rankin	995
2352	Montgomery Ave. & 5th St., Philadelphia	1,337	3441	115-51st St., Pittsburgh	441
2352	G. W. Alexander & Co., Inc., 1st Ave. & Franklin St., West Reading	191	3443	2414 Walnut St., McKeesport	506
3715	Strick Div., Fruehauf Corp., U. S. Highway #1, Fairless Hills 19030	1,036	3312	Fairless Hills	6,036
			3317	Fairless Hills	670
	Sun Oil Co. - Marcus Hook Refinery, 1608 Walnut St., Philadelphia 19103	6,853	3441	Park Rd., Ambridge	2,480
2911	Marcus Hook	3,676	3499	545 Central Ave., Johnstown	1,211
3731	Sun Shipbuilding & Dry Dock Co., Morton Ave., Chester	3,177	3449	Railroad Ave., Shiremanstown	215
			2491	German Twp.	5
			3317	First St., Ellwood City	1,670
			3241	Northampton	306
			3533	Oil City	370
			3312	Scott St. Box 842, Donora	1,421
			3312	130 Lincoln Ave., Vandergrift	951
				Universal - Cyclops Steel Corp., Station St., Bridgeville 15017	3,018
				Collier Twp.	1,973
				701 E. Spring St., Titusville	832
				Smallman & 31st St., Pittsburgh	213
3356	Superior Tube Co., Germantown Pike, Norristown 19404	1,166		West Virginia Pulp & Paper Co., 230 Park Ave., New York, New York 10017	1,311
			2621	Tyrone	829
	Sylvania Electric Products, Inc., 5700 W. Genesee St., Camillus, New York 13031	7,250	2641	Williamsburg	482
3671	3101 Pleasant Valley Blvd., Altoona	1,139			
3671	Emporium	1,341		Western Electric Co., 195 Broadway, New York, New York 10038	7,002
3671	Mabon St., Brookville	771	3679	555 Union Blvd., Allentown	4,731
3673	1891 E. 3rd St., Williamsport	622	3679	Marion & Vine Sts., Laureldale	2,271
3641	1050 Broad St., Montoursville	584			
3679	Oil Creek Rd., R. D. 2, Titusville	222		Westinghouse Air Brake Co., 401 Liberty Ave., Pittsburgh 15222	4,770
3357	Lexington & 2nd Aves., Warren	856		1789-1807 Braddock Ave., Swissvale	1,517
3341	N. Towanda Twp.	899	3662	Commerce & Herman Sts., Wilmerding	3,253
3641	Washington Rd., Saint Marys	406	3742		
3571	Route #220, Muncy	207			
3461	3128 Roosevelt Ave., York	203		Westinghouse Electric Corp., P. O. Box 2278, Pittsburgh 15230	28,587
				Linhart, Wilkins Twp.	180
	Talon, Inc., 626 Arch St., Meadville 16335	1,962	3362	Cheswick	1,098
3964	626 Arch St., Meadville	1,864	3561	700 Braddock Ave., East Pittsburgh	10,203
3643	Gibson Electric Co., Old William Penn Highway, Delmont	98	3621	543 N. Lang Ave., Pittsburgh	446
			3613	Tuscarora Rd., Boro Twp.	1,890
2051	Tasty Baking Co., 2801 Hunting Park Ave., Philadelphia 19129	1,131	3629	107 Station St., Johnstown	14
			3511	1st & Powhatten Ave., Tinicum Twp.	7,097
3552	Textile Machine Works, 200 North Park Rd., Wyomissing 19918	3,488	3629	267 N. Pennsylvania Ave., Wilkes-Barre	39
			3612	469 Sharpsville Ave., Sharon	4,899
	Textron, Inc., 10 Dorrance St., Providence, Rhode Island	1,473	3612	P. O. Box 231, Greenville	251
3548	Pittsburgh Steel Foundry Co., 3rd St., Glassport	107	3613	126 S. 30th St., Philadelphia	114
3323	Pittsburgh Steel Foundry Co., 6th St., Glassport	723	2851	Manor	45
3323	Pittsburgh Steel Foundry Co., 25th St., McKeesport	361	3264	333 W. 3rd St., Derry	432
2042	Beacon Div., 785 W. Philadelphia St., York	83	3299	Irwin	124
3821	E. F. Griffiths - Sprague Meter Div., 346 E. Walnut Lane, Philadelphia	129	3392	R. D. #2, Box 45, Blairsville	462
2293	Burkhart Div., 80th & Island Rd., Philadelphia	70	3644	Trafford	121
			3679	Hempfield Twp.	1,116
			3629	D St. & Erie Ave., Philadelphia (discontinued business in 1962)	56
			3634	Wiegand Co., Edwin L., Homewood 15208	1,121
	Thompson Ramo Wooldridge, Inc., 23555 Euclid Ave., Cleveland, Ohio 44117	1,429	3537	Yale & Towne Mfg. Co., 11000 Roosevelt Blvd., Philadelphia 19116	2,327
3722	601 E. Market St., Danville	762			
3722	1400 N. Cameron St., Harrisburg	667			
	Triangle Publications, Inc., 400 N. Broad St., Philadelphia 19101	4,520			
2721	Gravure Div., 440 N. Broad St., Philadelphia	1,020			
2711	Philadelphia Daily News, 22nd & Arch Sts., Philadelphia	479			
2711	Philadelphia Inquirer, 400 N. Broad St., Philadelphia	3,021			
	Tung-Sol Electric, Inc., 1 Summer Ave., Newark, New Jersey 07104	1,628			
3641	2nd & Jefferson St., Boyertown	349			
3671	Main St., Weatherly	1,009			
3642	633 McKinley St., Hazleton	270			



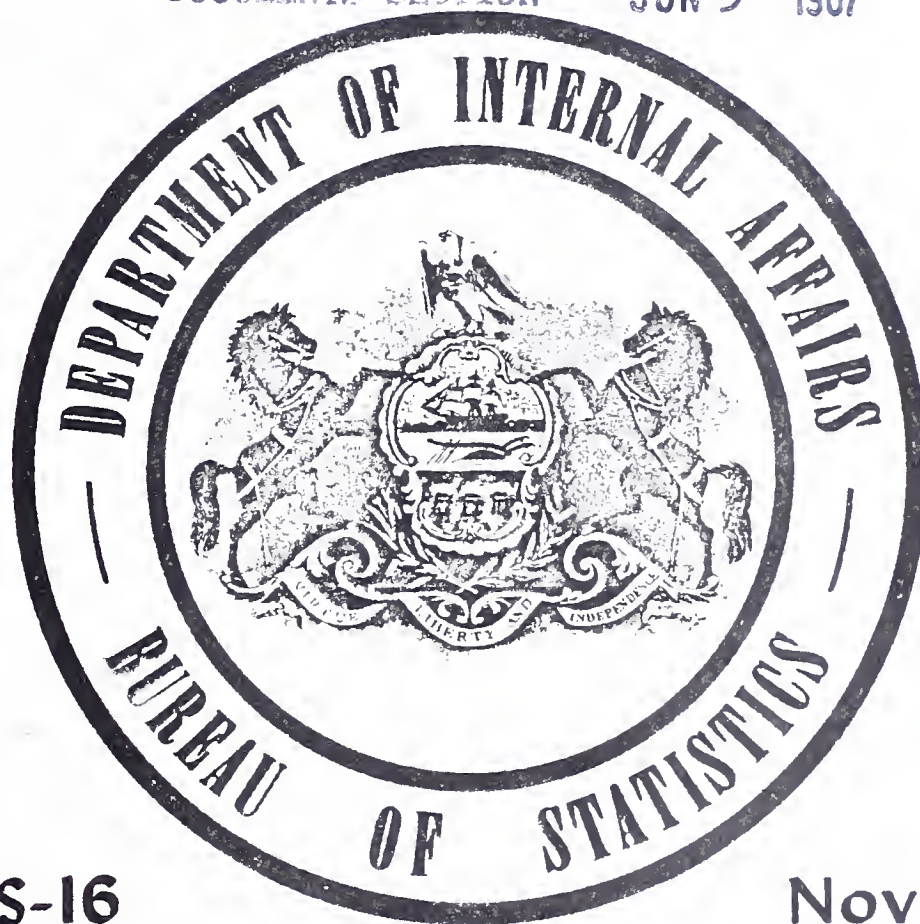




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# REAPPORTIONED VOTING DISTRICTS IN PENNSYLVANIA (MAPS AND POPULATION)

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November 1966

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# LIST OF PUBLICATIONS PREPARED BY THE BUREAU OF STATISTICS

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## A. CHARGE PUBLICATIONS

1. 1967 PENNSYLVANIA STATISTICAL ABSTRACT - Statistics, explanatory notes, definitions, and information on statistical sources are presented in 30 subject sections: Population, Income, and Religion; Vital Statistics; Accidents; Education; Labor Force, Employment, and Earnings; Prices; Housing; Social Insurance, Financial Assistance, and Veterans' Benefits; Welfare Services and Resources; Hospitals, Medical Care, and Rehabilitation; Mental Health; Crime and Law Enforcement; Courts and Law; Correction and Parole; Elections, Legislation, and Legislators; State Government; Local Government; Climate; Natural Resources and Conservation; Parks and Recreation; Area and Industrial Development; Agriculture; Mineral Industries; Construction; Manufacturing; Transportation; Communications and Public Utilities; Business and Trade; Banking and Finances; Foreign Commerce.  
  
There are 380 pages which contain 259 tables and 36 graphs and map diagrams. Price \$1.50 (plus 8¢ State sales tax for Pennsylvania residents). The 1964-65 issue is out of print. Copies of the 1966 issue are still available at the same price as the 1967 issue.
2. THE 1965 INDUSTRIAL DIRECTORY OF THE COMMONWEALTH OF PENNSYLVANIA (17th Edition) - Published every three years with supplements for the two years between directories. County Section - The names of all manufacturing establishments in each county are listed alphabetically within 4-digit Standard Industrial Classifications (Revised SIC). The following information is shown for each establishment: plant location, mailing address (if different than plant location), and number of employees. Industry Section - The names of all manufacturing establishments in the State are listed alphabetically within 4-digit Standard Industrial Classifications (Revised SIC). The county location and office mailing address are shown for each establishment. Public Utility Section - The names of all public utilities in the State, (except municipal authorities), are listed alphabetically within each type of utility classification. The office address and number of customers are shown for each public utility. 511 pages. Price \$7.50 (plus 38¢ State sales tax for Pennsylvania residents).
3. The 1966 SUPPLEMENT and 1967 SUPPLEMENT to the 1965 Industrial Directory of the Commonwealth of Pennsylvania. It brings up-to-date the complete listing of manufacturing establishments contained in the 1965 directory. Names, addresses, and employment of establishments beginning operations, establishments added through coverage checks, those terminating operations, those changing plant locations, and those having changes in their product classification during 1964 and 1965 are included. Price \$2.00 each (plus 10¢ State sales tax for Pennsylvania residents).
4. 1965 PENNSYLVANIA MUNICIPAL AUTHORITIES DIRECTORY - Contains the names, addresses, dates of incorporation, dates and amounts of bond issues and amounts outstanding for all municipal authorities in Pennsylvania, classified by type. Price \$1.00 (plus 5¢ State sales tax for Pennsylvania residents).
5. POPULATION AND AREA OF MUNICIPALITIES IN PENNSYLVANIA (S-9) - County map diagrams showing municipalities with area in square miles and 1950 and 1960 Census population figures. Ward population figures are given for Philadelphia, Pittsburgh, Erie, and Scranton. 70 pages. Price \$1.00 (plus 5¢ State sales tax for Pennsylvania residents).

## B. FREE PUBLICATIONS

6. MANUFACTURING STATISTICS  
(Based on the annual Pennsylvania Industrial Census).  
  
M-1 1965 Statistics for Manufacturing Industries in Pennsylvania - Number of establishments, capital expenditures, number of employees, wages and salaries, value of production and related activities, and value added by manufacture. Above data classified by major industry group (2-digit) and by county and selected cities and boroughs. Also includes statistics on railroad repair establishments, by county.  
  
M-2 1965 Statistics by Major Industry Group for Counties and Urban Places - Same data as M-1 classified by major industry group (2-digit) for each county and selected cities and boroughs.  
  
M-4 1965 Statistics by Industry and by Size of Establishment - Same data as in M-1 classified by industry group (4-digit) and by size of establishment within major industry group (2-digit). Also changes in number of establishments and related employment changes classified by new, discontinuing, inter-county migration and other. Above data classified by county and major industry group (2-digit).  
  
M-5 1965 County Industry Reports - Separate report for each county. Same data as in M-1 classified by industry group (4-digit) and by city, borough, and township.  
  
M-6 (FT-65) 1965 Exports by Pennsylvania Manufacturing Establishments - Number of exporters and value of exports, by county and by industry group (4-digit) for the State; list of products exported (4-digit) by manufacturers in each county; number exporting through each U. S. port; and number exporting to each country.  
  
M-7 1966 Directory of Pennsylvania Manufacturing Exporters:  
County Section - A county listing of all Pennsylvania manufacturing exporters, showing plant location, mailing address, and a list of the products exported by each.  
Products Section - A listing of products exported (4-digit) and the names and addresses of the exporting establishments. Each establishment is listed under every product (4-digit) which it exports.  
  
M-8 1965 Statistics for Selected Pennsylvania SMSA's - Same data as in M-1 classified by industry group (4-digit) for 6 multi-county Standard Metropolitan Statistical Areas.
7. PUBLIC UTILITY STATISTICS  
(Based on the annual Census of Public Utilities in Pennsylvania)  
Number of utilities, plant investment, capital expenditures, revenue and expense, wages and salaries, number of employees, number of customers, and production in units.  
  
U-1 1965 Statistics for Electric Utilities in Pennsylvania  
  
U-2 1965 Statistics for Gas Utilities in Pennsylvania  
  
U-3 1965 Statistics for Telephone Utilities in Pennsylvania  
  
U-4 1965 Statistics for Water Utilities in Pennsylvania  
  
U-5 1965 Statistics for Sewer Authorities in Pennsylvania  
  
U-6 1965 Statistics for Motor Bus and Electric Transportation Companies in Pennsylvania
8. MUNICIPAL AUTHORITY STATISTICS  
  
A-65 1965 Statistics for Municipal Authorities - Number of municipal authorities by year of incorporation and purpose; and number of projects and amounts of bonds outstanding, by county and purpose.
9. INCOME AND POPULATION STATISTICS  
  
IP-1 Pennsylvania's Personal Income and Population by County: Selected Years 1929 - 1963 - Estimates of personal income, population, and per capita income for each county for 1929, 1940, and 1947-63; estimates of personal income by county of residence of recipients and by county of source for 1920, 1940, 1947, 1951, 1955, and 1959-63; classified by type of income and industry source; and chart of population estimates 1929-62 for each county.  
  
IP-2 Personal Income Estimates for Cities, Boroughs, and Townships in Pennsylvania - 1963 - Estimates of personal income by city, borough, and township in which the income recipients live; classified by type of income and industry source.
10. SPECIAL RELEASES  
  
S-2 Industrial Statistics for Pennsylvania 1951 to 1955 - Number of establishments, number of employees, wages and salaries, capital invested, value of production, and value added by manufacture. Above data classified by major industry group, county, and selected cities and boroughs.

LIST OF PUBLICATIONS PREPARED BY THE BUREAU OF STATISTICS (Continued)

S-10 Employment by Broad Industry Groups and by County for Selected Years: 1919-1961 - County figures for employment in manufacturing (2-digit SIC), mining, and railroad repair shops for 1919, 1930, 1940, 1951, 1956-1961, adjusted to a comparable industrial classification and coverage basis.

S-11a Economic Base Studies for Urban Planning and Development in Pennsylvania - A description and evaluation of such studies in Pennsylvania--by Morris Hamburg, University of Pennsylvania.

S-11b An Evaluation of Selected Data Requirements and Availability for Urban Economic Planning and Development in Pennsylvania--by Morris Hamburg and John H. Norton, University of Pennsylvania.

S-11c Selected Methods of Analysis for Urban Economic Planning and Development in Pennsylvania - Commentary on Regional Economic Accounting Systems Benefit-Cost Analysis, and Statistical Decision Theory--by Morris Hamburg and Thomas W. Langford, Jr., Wharton School of Finance and Commerce, University of Pennsylvania.

S-12 (LFC) County Labor Force Report - These reports contain information on employable age population, labor force, unemployment, occupations, and industrial attachment for the cities, boroughs, and townships in fifty-one (51) counties. The data in these reports are not available from any other source. Not included are 16 counties for which similar information is available in the Census Tract publications of the U. S. Bureau of the Census.

S-13 Pennsylvania Scientific and Technical Personnel, 1962 - Number of scientific and technical personnel in Pennsylvania and 12 Standard Metropolitan Statistical Areas; by field, major work activity, type of employer, and highest degree - also selected comparisons with the U. S. and seven other large states.

S-15 Listing of Manufacturing Companies With One Thousand or More Employees in Pennsylvania: 1962

S-16 Reapportioned Voting Districts in Pennsylvania (Maps and Population) - Maps and statistical tables containing population figures by district for the reapportioned Congressional, State Senatorial, and State House of Representative Districts.

C. OUT OF PRINT PUBLICATIONS

These out-of-print publications are listed because copies of many of these reports are available for reference in public, university, and college libraries.

Pennsylvania Productive Industries - These publications include information on manufacturing, public utilities, and mineral industries for the years 1916 - 1950. Data are classified by the Department of Internal Affairs Industrial Classification System, which has been superseded by the Standard Industrial Classification System (Revised SIC).





REAPPORTIONED VOTING DISTRICTS IN PENNSYLVANIA

CONTENTS

	<u>Page</u>
Table 1 Congressional Districts in Pennsylvania - March 8, 1966 . . . . .	8
Map Congressional Districts . . . . .	9
Table 2 State Senatorial Districts in Pennsylvania - February 4, 1966 . . . . .	12
Map State Senatorial Districts. . . . .	13
Table 3 State House of Representatives Districts in Pennsylvania - February 4, 1966. . . . .	16
Map State House of Representatives Districts . . . . .	17
Map Cities of Philadelphia and Pittsburgh Representatives Districts . . . . .	18
Map Selected County and City Representatives Districts . . . . .	19



**PENNSYLVANIA  
CONGRESSIONAL  
DISTRICTS**



TABLE 1: CONGRESSIONAL DISTRICTS IN PENNSYLVANIA

(March 8, 1966)

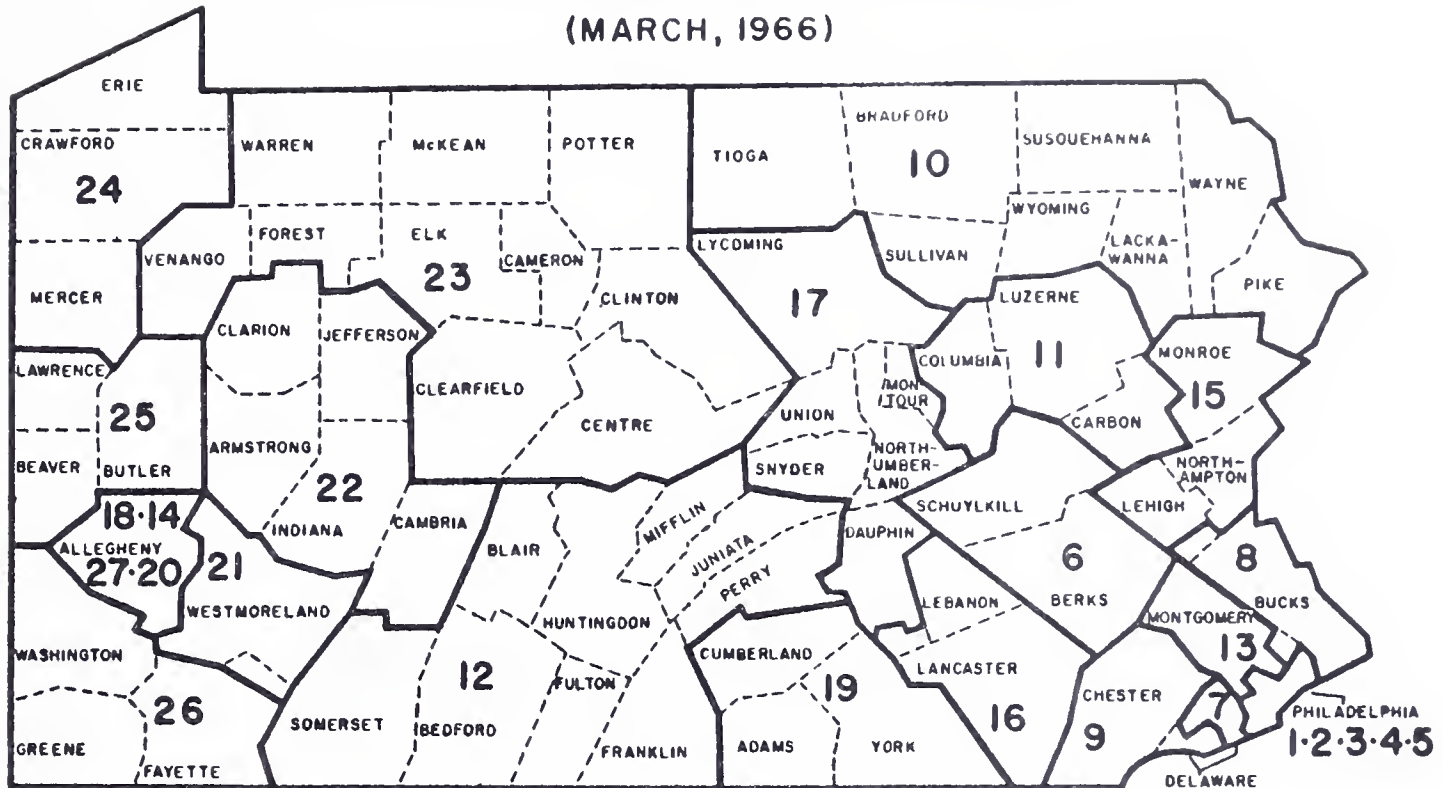
<u>District number</u>	<u>Counties included</u>	<u>1960 population</u>
1	Philadelphia (part)	399,628
2	Philadelphia (part)	406,028
3	Philadelphia (part)	396,538
4	Philadelphia (part)	383,154
5	Philadelphia (part)	417,164
6	Berks - Schuylkill	448,441
7	Delaware (part)	390,008
8	Bucks - Lehigh (part) - Montgomery (part)	356,821
9	Chester - Delaware (part)	373,754
10	Bradford - Lackawanna - Pike - Sullivan - Susquehanna - Tioga - Wayne - Wyoming	419,666
11	Carbon - Columbia - Luzerne	453,350
12	Bedford - Blair - Franklin - Fulton - Huntingdon - Juniata - Mifflin - Perry - Somerset	482,201
13	Montgomery (part)	481,547
14	Allegheny (part)	390,512
15	Lehigh (part) - Monroe - Northampton	455,396
16	Dauphin (part) - Lancaster - Lebanon	390,436
17	Dauphin (part) - Lycoming - Montour - Northumberland - Snyder - Union	480,834
18	Allegheny (part)	409,291
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20	Allegheny (part)	404,997
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23	Cameron - Centre - Clearfield - Clinton - Elk - Forest - McKean - Potter - Venango - Warren	429,009
24	Crawford - Erie - Mercer	456,157
25	Beaver - Butler - Lawrence	434,552
26	Greene - Fayette (part) - Washington	418,933
27	Allegheny (part)	423,787

Source: All population figures from U. S. Bureau of the Census, except for wards in Philadelphia which are estimates of the Committee of Seventy.

For specific definitions of Congressional Districts see: Act No. 1, 1966 Special Session No. 2.

# CONGRESSIONAL DISTRICTS

(MARCH, 1966)



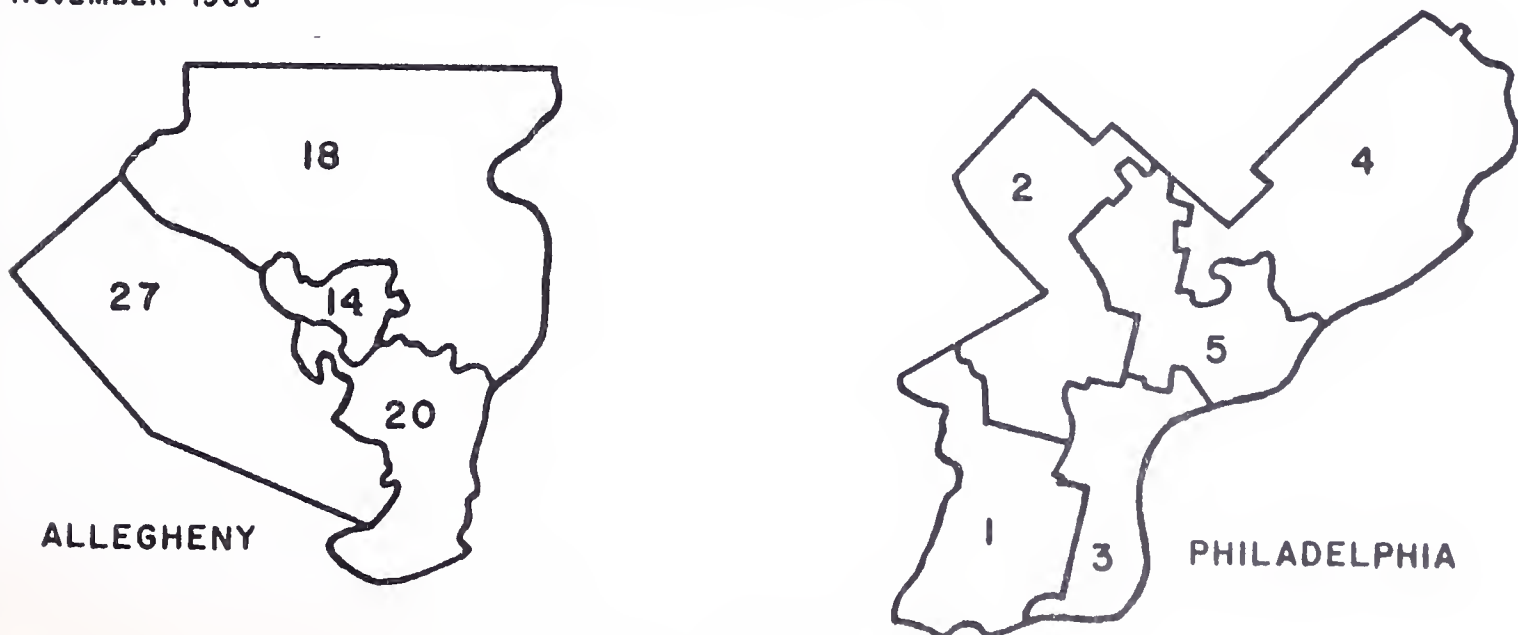
## LEGEND

CONGRESSIONAL DISTRICT LINES —————  
 COUNTY LINES - - - - -

## CONGRESSIONAL DISTRICTS IN ALLEGHENY AND PHILADELPHIA COUNTIES

(MARCH, 1966)

DEPARTMENT OF INTERNAL AFFAIRS  
 NOVEMBER 1966







**PENNSYLVANIA  
STATE  
SENATORIAL  
DISTRICTS**

TABLE 2: STATE SENATORIAL DISTRICTS IN PENNSYLVANIA

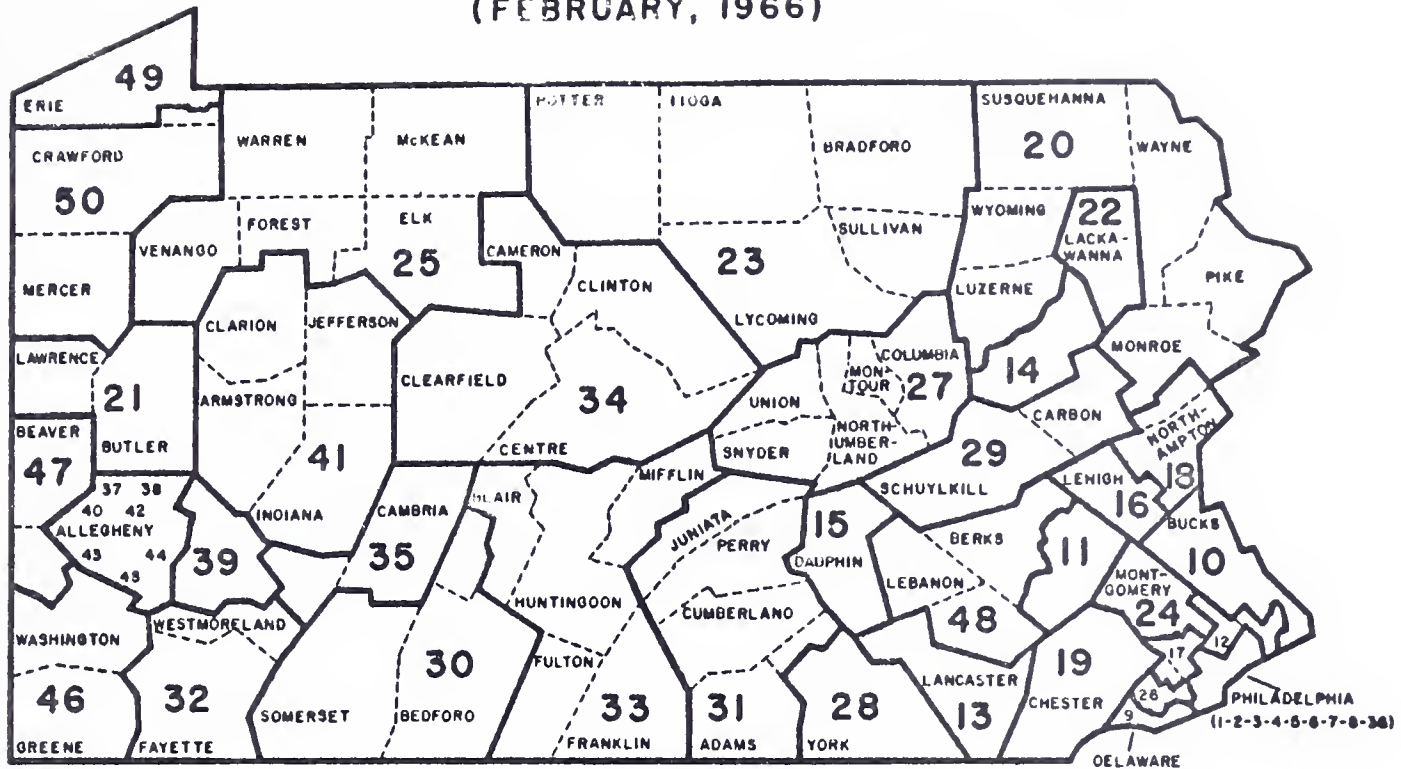
(February 4, 1966)

District number	Counties included	1960 population	District number	Counties included	1960 population
1	Philadelphia (part)	238,235	26	Delaware (part)	248,695
2	Philadelphia (part)	220,271	27	Columbia - Montour - North- umberland - Snyder - Union	225,925
3	Philadelphia (part)	221,521	28	York (part)	226,517
4	Philadelphia (part)	240,838	29	Carbon - Schuylkill	225,916
5	Philadelphia (part)	213,437	30	Bedford - Blair (part) - Somerset	221,839
6	Philadelphia (part)	228,498	31	Adams - Cumberland - Juniata - Perry - York (part)	230,997
7	Philadelphia (part)	222,035	32	Fayette - Westmoreland (part)	243,855
8	Philadelphia (part)	207,225	33	Blair (part) - Franklin - Fulton - Huntingdon - Mifflin	217,906
9	Delaware (part)	228,743	34	Cameron - Centre - Clearfield - Clinton	205,319
10	Bucks (part)	231,542	35	Cambria - Westmoreland (part)	235,555
11	Berks (part)	213,553	36	Philadelphia (part)	210,452
12	Bucks (part) - Montgomery (part)	220,518	37	Allegheny (part)	237,829
13	Lancaster (part)	216,134	38	Allegheny (part)	233,003
14	Luzerne (part)	232,500	39	Westmoreland (part)	245,842
15	Dauphin	220,255	40	Allegheny (part)	241,633
16	Lehigh	227,536	41	Armstrong - Clarion - Indiana - Jefferson	239,090
17	Delaware (part) - Montgomery (part)	219,528	42	Allegheny (part)	243,774
18	Monroe (part) - Northampton	224,741	43	Allegheny (part)	232,822
19	Chester	210,608	44	Allegheny (part)	218,410
20	Luzerne (part) - Monroe (part) Pike - Susquehanna - Wayne - Wyoming	218,055	45	Allegheny (part)	221,116
21	Butler - Lawrence	227,604	46	Greene - Washington (part)	233,886
22	Lackawanna	234,531	47	Beaver - Washington (part)	229,757
23	Bradford - Lycoming - Potter - Sullivan - Tioga	223,640	48	Berks (part) - Lancaster (part) - Lebanon	214,939
24	Montgomery (part)	229,377	49	Erie (part)	236,345
25	Elk - Forest - McKean - Venango - Warren	207,207	50	Crawford - Erie (part) - Mercer	219,812

Source: All population figures from U. S. Bureau of the Census, except for wards in Philadelphia which are estimates of the Committee of Seventy.

For specific definitions of Senate Districts see: Senate Bulletin, Mark Gruell, Jr., Secretary, Reapportionment of the Senate by the Pennsylvania Supreme Court, February 4, 1966.

# STATE SENATORIAL DISTRICTS (FEBRUARY, 1966)



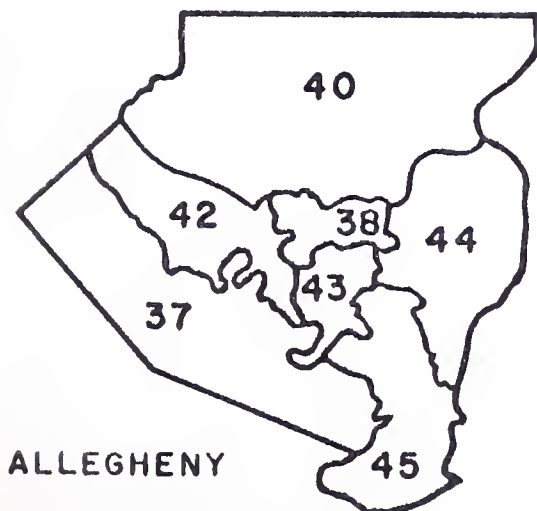
## LEGEND

SENATORIAL DISTRICT LINES —————  
COUNTY LINES - - - - -

## SENATORIAL DISTRICTS IN ALLEGHENY AND PHILADELPHIA COUNTIES

(FEBRUARY, 1966)

DEPARTMENT OF INTERNAL AFFAIRS  
NOVEMBER 1966







**PENNSYLVANIA  
STATE  
REPRESENTATIVES  
DISTRICTS**

TABLE 3: STATE HOUSE OF REPRESENTATIVES DISTRICTS IN PENNSYLVANIA

(February 4, 1966)

District number	Counties included	1960 population	District number	Counties included	1960 population	District number	Counties included	1960 population
1	Erie (part)	55,267	71	Cambria (part)	56,756	136	Northampton (part)	57,278
2	Erie (part)	55,381	72	Cambria (part)	56,474	137	Northampton (part)	51,138
3	Erie (part)	56,233	73	Cambria (part)	54,130	138	Monroe (part) - Northampton (part)	50,990
4	Erie (part)	53,386	74	Clearfield (part)	62,744	139	Monroe (part) - Pike - Wayne	63,643
5	Crawford (part) - Erie (part)	52,872	75	Cameron - Clinton (part) - Elk	51,282	140	Bucks (part)	51,083
6	Crawford	55,499	76	Centre (part) - Clinton (part)	51,218	141	Bucks (part)	52,113
7	Mercer (part)	63,345	77	Centre (part) - Clearfield (part)	61,414	142	Bucks (part)	51,652
8	Mercer (part)	64,174	78	Bedford - Fulton	53,048	143	Bucks (part)	50,044
9	Lawrence (part)	54,308	79	Blair (part)	62,532	144	Bucks (part)	53,162
10	Lawrence (part)	58,657	80	Blair (part)	61,586	145	Bucks (part)	50,513
11	Butler (part)	56,619	81	Blair (part) - Huntingdon (part)	48,518	146	Montgomery (part)	52,379
12	Butler (part)	58,020	82	Huntingdon (part) - Mifflin	48,439	147	Montgomery (part)	54,812
13	Beaver (part)	50,198	83	Lycoming (part)	51,014	148	Montgomery (part)	58,631
14	Beaver (part)	50,584	84	Lycoming (part)	58,353	149	Montgomery (part)	64,529
15	Beaver (part)	54,669	85	Snyder - Union	51,568	150	Montgomery (part)	55,040
16	Beaver (part)	51,497	86	Cumberland (part) - Juniata - Perry	48,358	151	Montgomery (part)	56,962
17	Allegheny (part)	55,825	87	Cumberland (part)	55,079	152	Montgomery (part)	54,252
18	Allegheny (part)	53,315	88	Cumberland (part)	54,314	153	Montgomery (part)	58,418
19	Allegheny (part)	57,796	89	Cumberland (part) - Franklin (part)	48,587	154	Montgomery (part)	61,659
20	Allegheny (part)	57,499	90	Franklin (part)	49,106	155	Chester (part)	53,213
21	Allegheny (part)	50,376	91	Adams	51,906	156	Chester (part)	52,048
22	Allegheny (part)	51,251	92	York (part)	60,120	157	Chester (part)	52,485
23	Allegheny (part)	51,801	93	York (part)	58,978	158	Chester (part)	52,862
24	Allegheny (part)	50,690	94	York (part)	59,208	159	Delaware (part)	51,809
25	Allegheny (part)	61,198	95	York (part)	60,030	160	Delaware (part)	50,188
26	Allegheny (part)	63,423	96	Lancaster (part)	61,055	161	Delaware (part)	61,797
27	Allegheny (part)	57,138	97	Lancaster (part)	50,789	162	Delaware (part)	55,355
28	Allegheny (part)	57,952	98	Lancaster (part)	57,105	163	Delaware (part)	55,284
29	Allegheny (part)	63,587	99	Lancaster (part)	47,908	164	Delaware (part)	61,649
30	Allegheny (part)	62,905	100	Lancaster (part)	49,244	165	Delaware (part)	60,485
31	Allegheny (part)	60,304	101	Lebanon (part)	51,908	166	Delaware (part)	54,019
32	Allegheny (part)	57,629	102	Lancaster (part) - Lebanon (part)	51,203	167	Delaware (part)	53,281
33	Allegheny (part)	57,070	103	Dauphin (part)	53,979	168	Delaware (part)	49,287
34	Allegheny (part)	56,098	104	Dauphin (part)	48,779	169	Philadelphia (part)	53,921
35	Allegheny (part)	53,341	105	Dauphin (part)	54,825	170	Philadelphia (part)	51,425
36	Allegheny (part)	51,596	106	Dauphin (part)	62,672	171	Philadelphia (part)	54,454
37	Allegheny (part)	57,350	107	Northumberland (part)	60,357	172	Philadelphia (part)	53,173
38	Allegheny (part)	53,060	108	Montour - Northumberland (part)	60,511	173	Philadelphia (part)	49,654
39	Allegheny (part)	60,200	109	Columbia	53,489	174	Philadelphia (part)	57,656
40	Allegheny (part)	57,095	110	Bradford	54,925	175	Philadelphia (part)	63,472
41	Allegheny (part)	54,270	111	Sullivan - Susquehanna - Wyoming	56,201	176	Philadelphia (part)	63,506
42	Allegheny (part)	63,299	112	Lackawanna (part)	55,074	177	Philadelphia (part)	59,329
43	Allegheny (part)	50,301	113	Lackawanna (part)	56,369	178	Philadelphia (part)	55,296
44	Allegheny (part)	51,519	114	Lackawanna (part)	61,301	179	Philadelphia (part)	56,387
45	Allegheny (part)	50,699	115	Lackawanna (part)	61,787	180	Philadelphia (part)	58,127
46	Washington (part)	50,156	116	Luzerne (part)	57,078	181	Philadelphia (part)	54,936
47	Washington (part)	49,398	117	Luzerne (part)	58,437	182	Philadelphia (part)	55,107
48	Washington (part)	49,117	118	Luzerne (part)	52,162	183	Philadelphia (part)	61,237
49	Washington (part)	55,264	119	Luzerne (part)	57,538	184	Philadelphia (part)	63,360
50	Greene - Washington (part)	52,760	120	Luzerne (part)	58,206	185	Philadelphia (part)	57,124
51	Fayette (part)	55,113	121	Luzerne (part)	63,551	186	Philadelphia (part)	55,519
52	Fayette (part)	54,958	122	Carbon	52,889	187	Philadelphia (part)	51,928
53	Fayette (part)	59,269	123	Schuylkill (part)	58,731	188	Philadelphia (part)	58,039
54	Westmoreland (part)	62,373	124	Schuylkill (part)	58,790	189	Philadelphia (part)	60,589
55	Westmoreland (part)	55,045	125	Schuylkill (part)	55,506	190	Philadelphia (part)	60,467
56	Westmoreland (part)	59,859	126	Berks (part)	48,551	191	Philadelphia (part)	56,158
57	Westmoreland (part)	63,261	127	Berks (part)	49,626	192	Philadelphia (part)	50,896
58	Westmoreland (part)	63,044	128	Berks (part)	59,639	193	Philadelphia (part)	57,724
59	Westmoreland (part) - Armstrong (part)	49,047	129	Berks (part)	56,817	194	Philadelphia (part)	58,288
60	Indiana (part)	53,959	130	Berks (part)	60,781	195	Philadelphia (part)	54,816
61	Armstrong (part)	48,363	131	Lehigh (part)	53,407	196	Philadelphia (part)	52,795
62	Indiana (part)	52,568	132	Lehigh (part)	54,940	197	Philadelphia (part)	56,584
63	Clarion - Venango (part)	48,098	133	Lehigh (part)	60,817	198	Philadelphia (part)	56,734
64	Venango (part)	54,605	134	Lehigh (part)	58,372	199	Philadelphia (part)	60,079
65	Forest - Warren	50,067	135	Northampton (part)	55,325	200	Philadelphia (part)	64,660
66	Clearfield (part) - Jefferson	62,781				201	Philadelphia (part)	60,661
67	McKean	54,517				202	Philadelphia (part)	58,856
68	Potter - Tioga	53,097				203	Philadelphia (part)	59,555
69	Somerset (part)	57,355						
70	Cambria (part) - Somerset (part)	56,018						

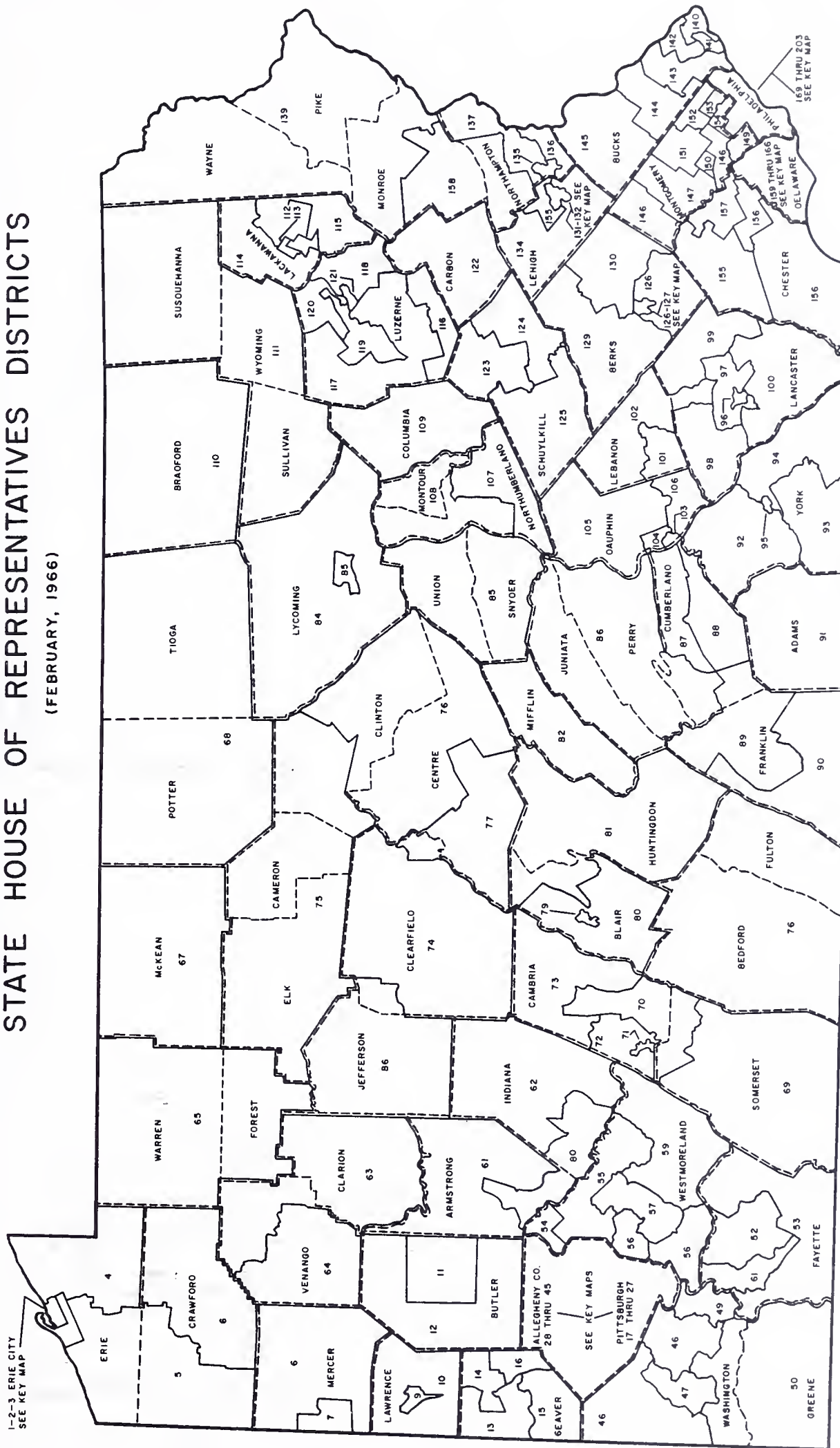
Source: All population figures from U. S. Bureau of the Census, except for wards in Philadelphia which are estimates of the Committee of Seventy.

For specific definitions of Representative Districts see: Senate Bulletin, Mark Gruell, Jr., Secretary, Reapportionment of the House of Representatives by the Pennsylvania Supreme Court, February 4, 1966; and Additions and Corrections on Legislative Reapportionment Decisions as Issued by The Pennsylvania Supreme Court.



# STATE HOUSE OF REPRESENTATIVES DISTRICTS

(FEBRUARY, 1966)

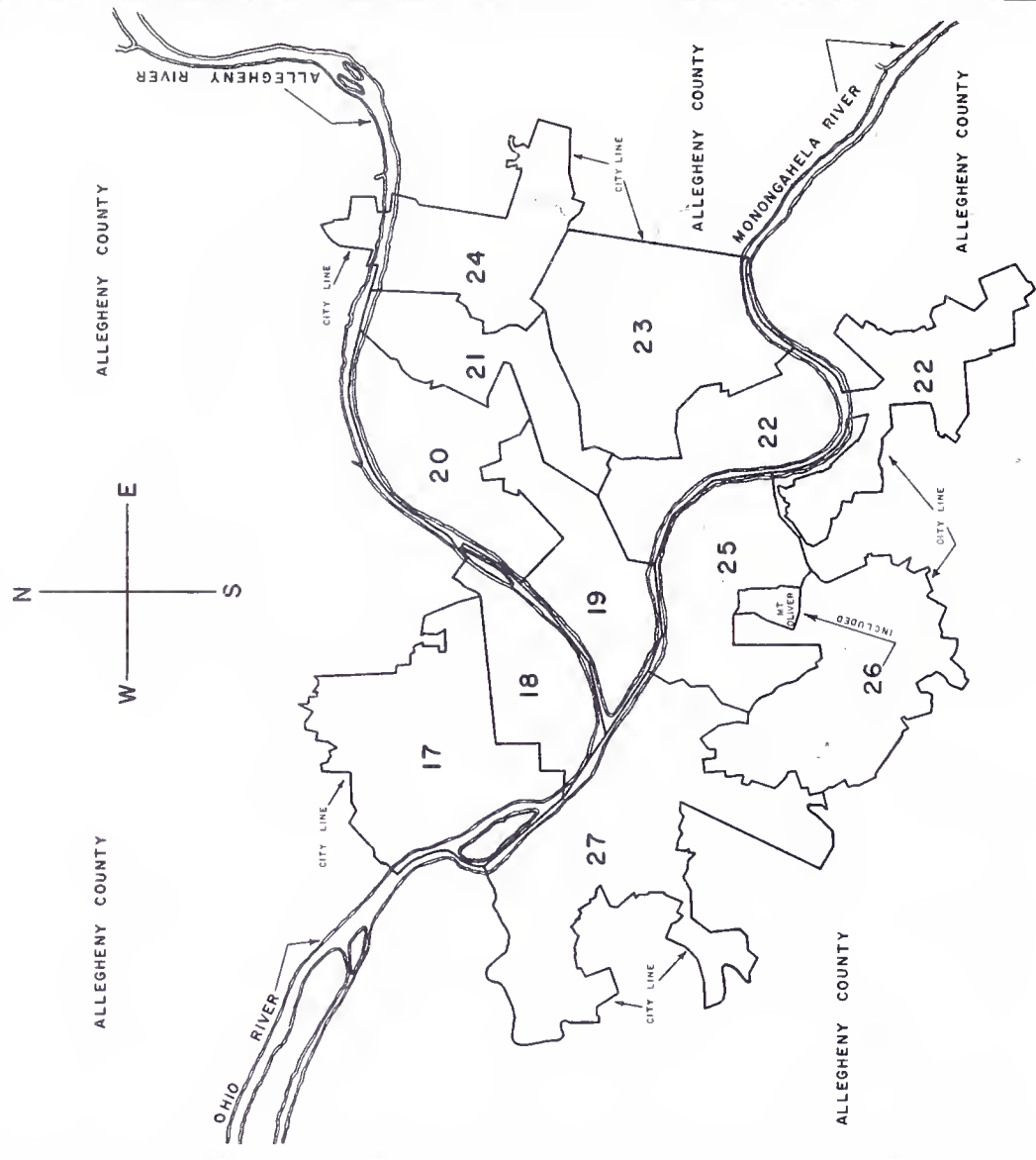
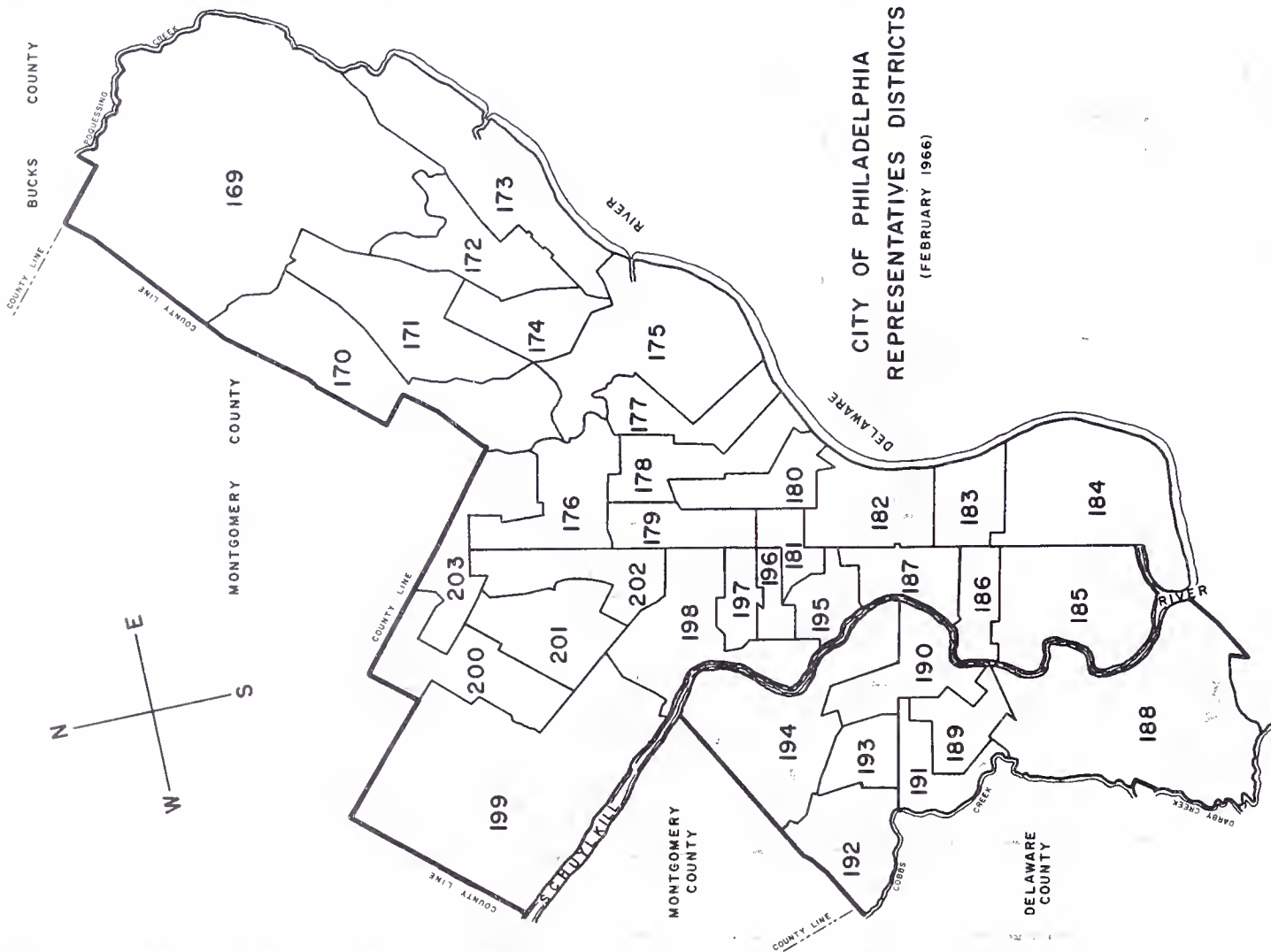


DEPARTMENT OF INTERNAL AFFAIRS  
NOVEMBER 1966

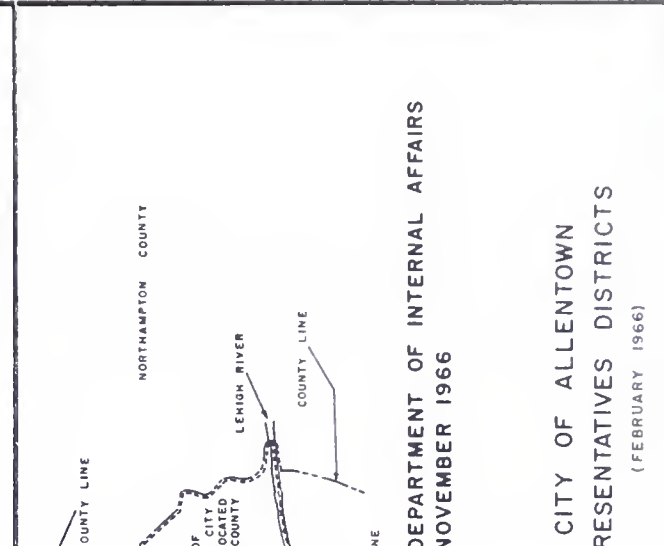
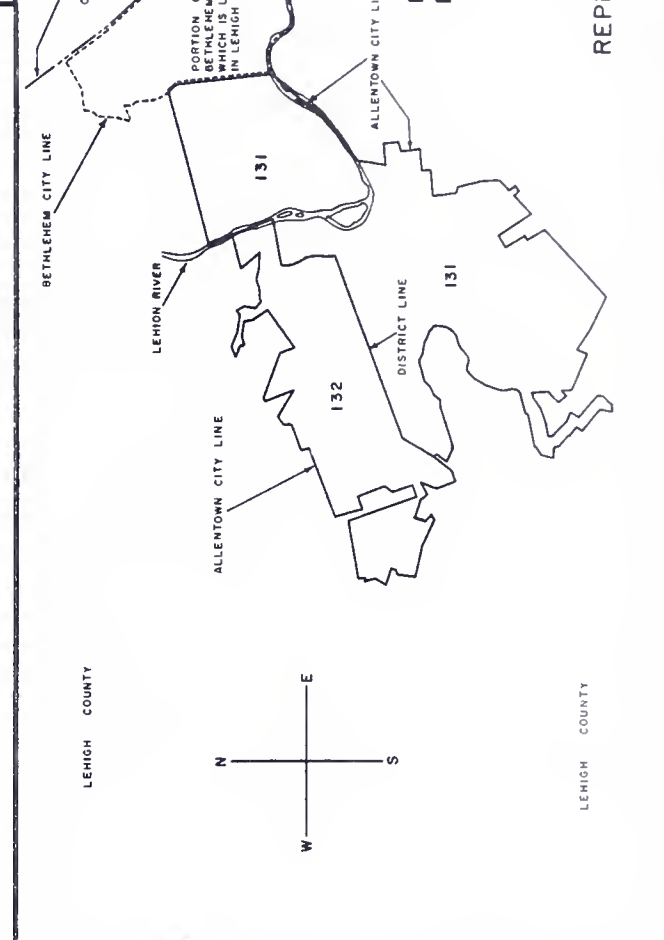
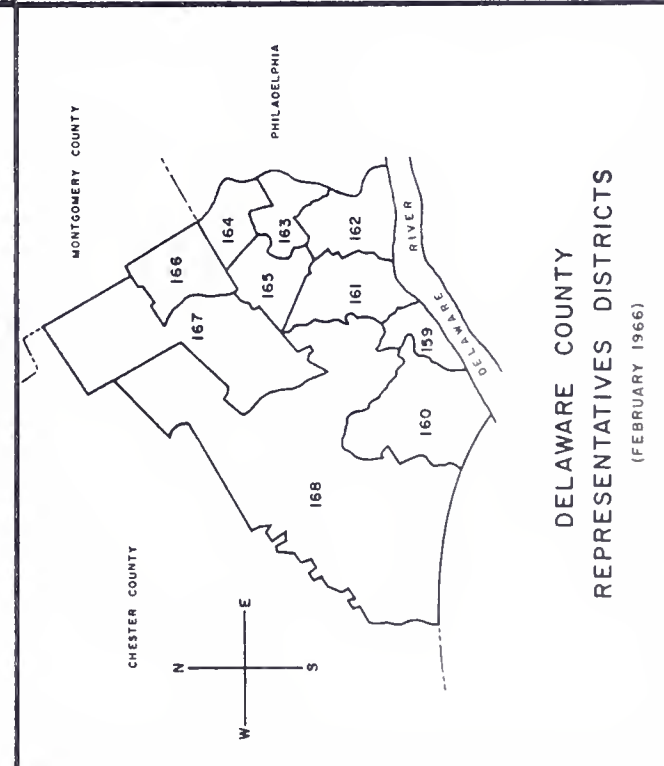
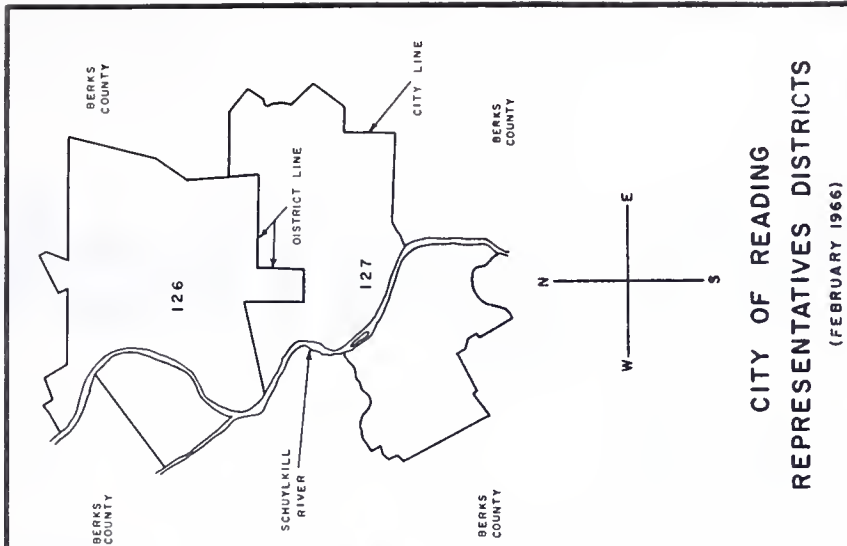
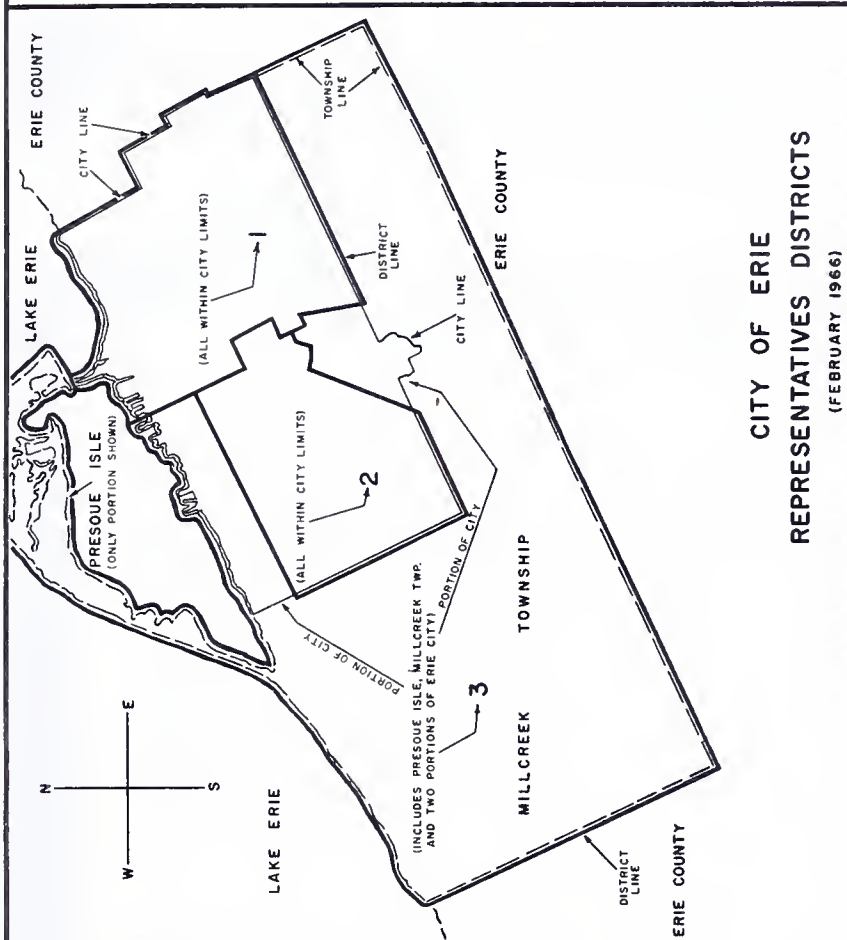
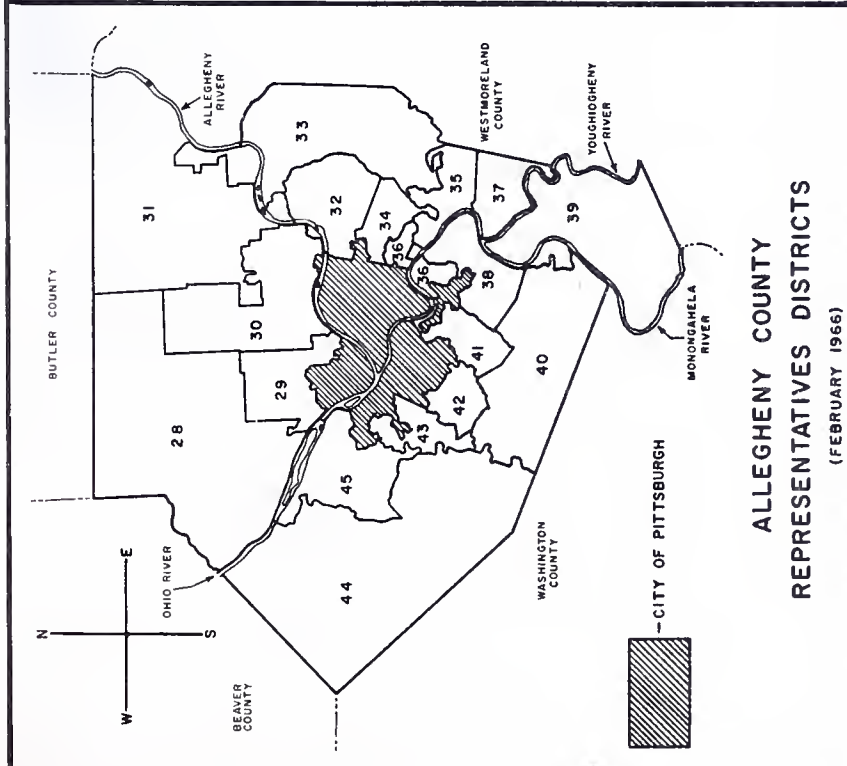
## LEGEND

STATE REPRESENTATIVES DISTRICT LINES ———

COUNTY LINES - - - - -



DEPARTMENT OF INTERNAL AFFAIRS  
NOVEMBER 1966

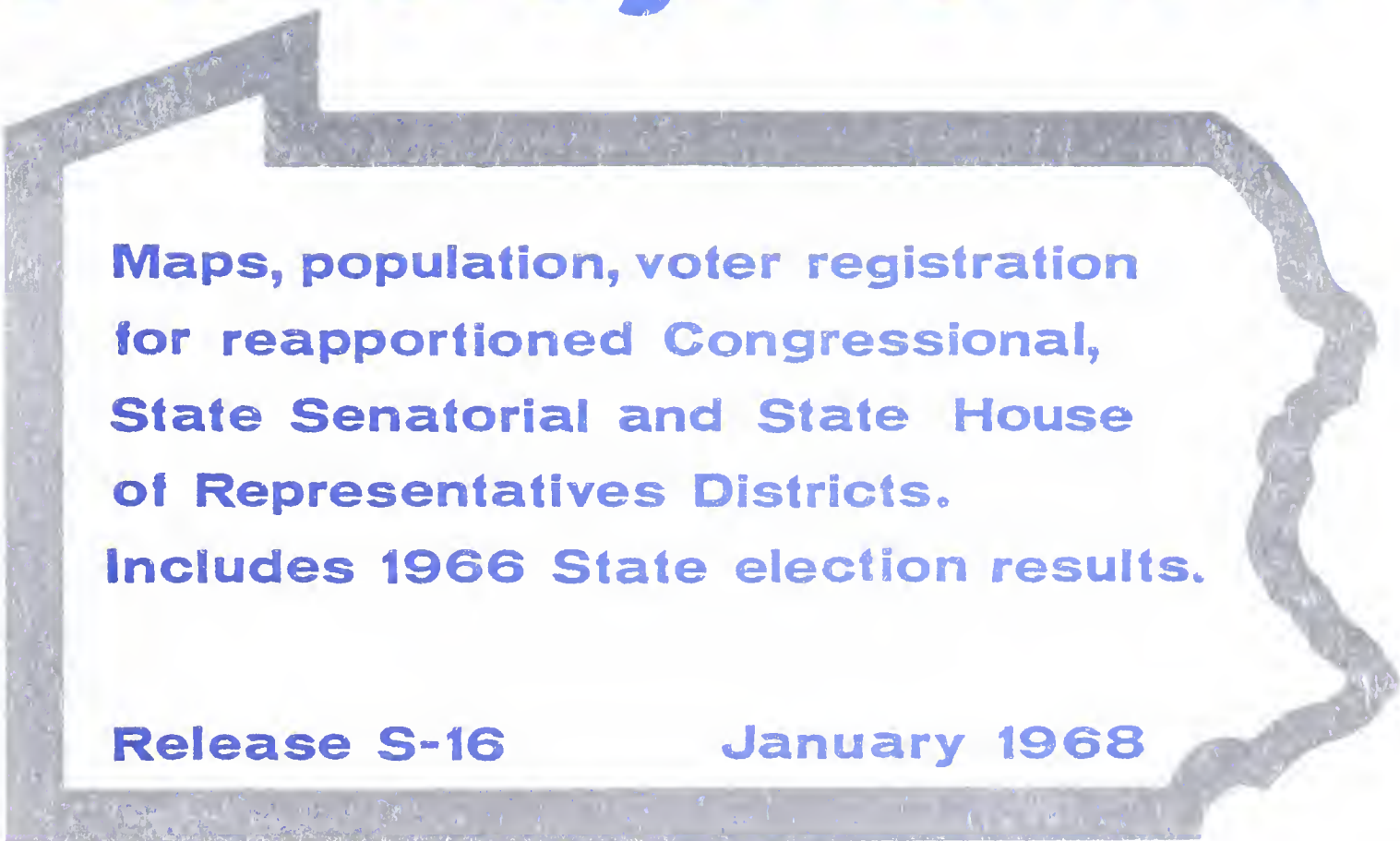






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# **Voting Districts in Pennsylvania**



**Maps, population, voter registration  
for reapportioned Congressional,  
State Senatorial and State House  
of Representatives Districts.  
Includes 1966 State election results.**

**Release S-16**

**January 1968**

**Department of Internal Affairs**

**JOHN K. TABOR, Secretary**

**Bureau of Statistics**

**Daniel B. Boyer, Jr., Director**

VOTING DISTRICTS IN PENNSYLVANIA

CONTENTS

	<u>Page</u>
Table 1 Congressional Districts in Pennsylvania - March 8, 1966 . . . . .	4
Map Congressional Districts . . . . .	5
Table 2 Votes cast for U. S. Congressmen: November 8, 1966 General Election . . . . .	6
Table 3 State Senatorial Districts in Pennsylvania - February 4, 1966 . . . . .	8
Map State Senatorial Districts . . . . .	9
Table 4 Votes cast for Major Candidates in the General Election, November 8, 1966 . . . . .	10
Table 5 State House of Representatives Districts in Pennsylvania - February 4, 1966 . . . . .	12
Map State House of Representatives Districts . . . . .	13
Map Cities of Philadelphia and Pittsburgh Representatives Districts . . . . .	14
Map Selected County and City Representatives Districts . . . . .	15
Table 6 Votes cast for the two Major Party Candidates for State Representatives in the General Election, November 8, 1966 . . . . .	16
Table 7 Number of votes for Governor, Lieutenant Governor, and Secretary of Internal Affairs, by County: General Election of November 8, 1966 . . . . .	19
Table 8 Votes registration by Party: November 7, 1967 . . . . .	20
Map Population for Pennsylvania by County: July 1, 1966 . . . . .	21



**PENNSYLVANIA  
CONGRESSIONAL  
DISTRICTS**

TABLE 1: CONGRESSIONAL DISTRICTS IN PENNSYLVANIA

(March 8, 1966)

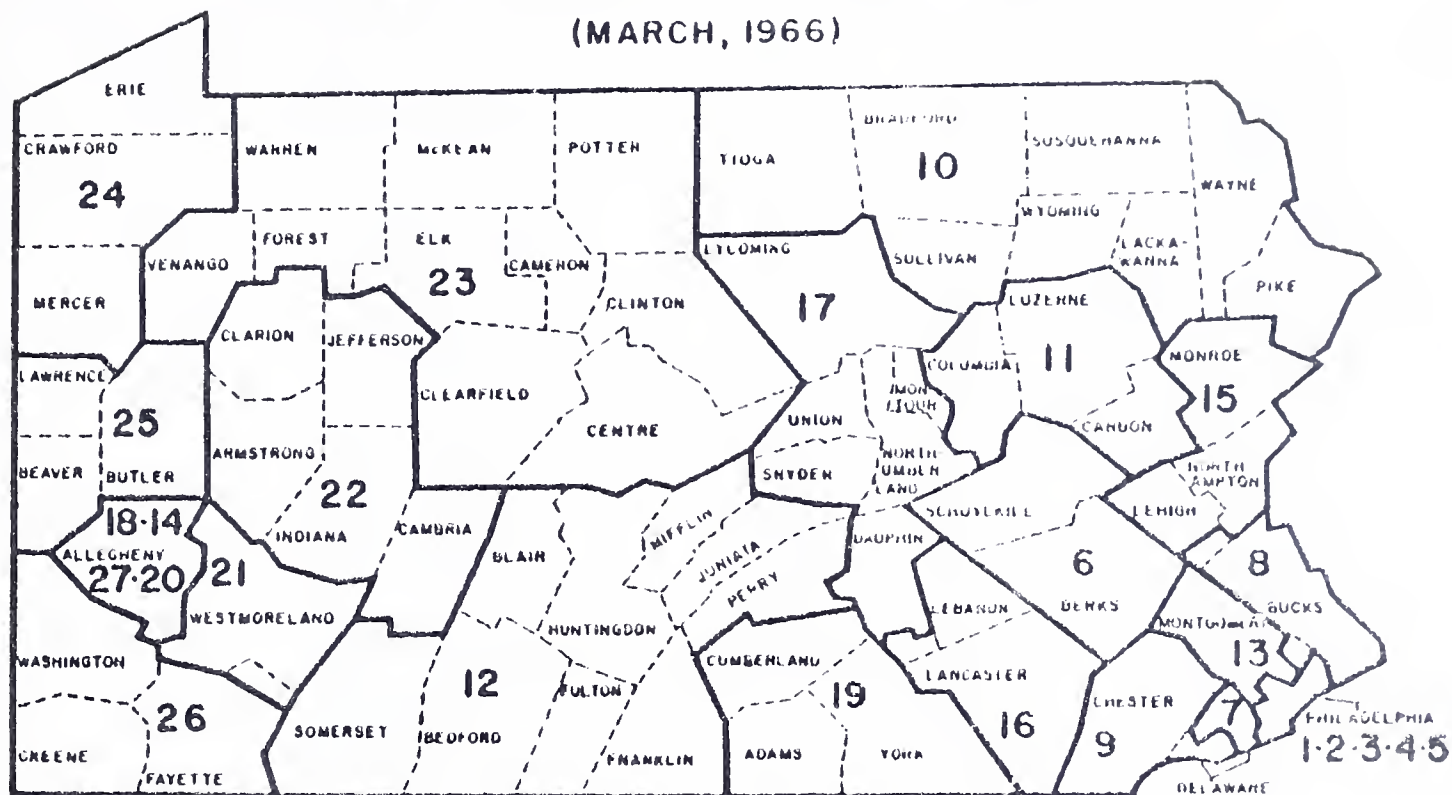
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3	Philadelphia (part)	396,538
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7	Delaware (part)	390,008
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26	Greene - Fayette (part) - Washington	418,933
27	Allegheny (part)	423,787

Source: All population figures from U. S. Bureau of the Census, except for wards in Philadelphia which are estimates of the Committee of Seventy.

For specific definitions of Congressional Districts see: Act No. 1, 1966 Special Session No. 2.

# CONGRESSIONAL DISTRICTS

(MARCH, 1966)



## LEGEND

CONGRESSIONAL DISTRICT LINES —————

COUNTY LINES - - - - -

## CONGRESSIONAL DISTRICTS IN ALLEGHENY AND PHILADELPHIA COUNTIES

(MARCH, 1966)

DEPARTMENT OF INTERNAL AFFAIRS  
NOVEMBER 1966

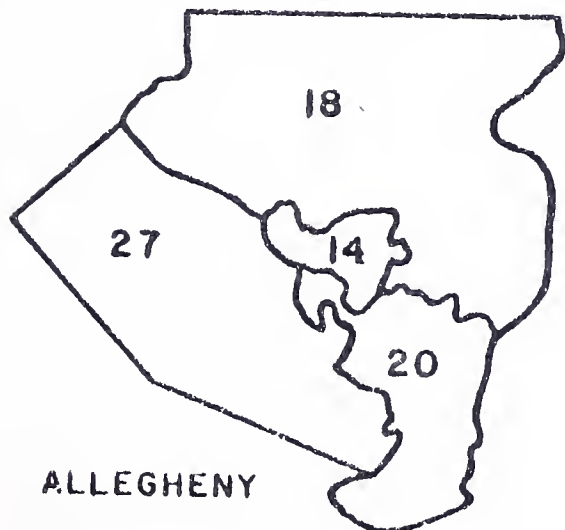




TABLE 2: VOTES CAST FOR U. S. CONGRESSMEN: NOVEMBER 8, 1966 GENERAL ELECTION

District number	Winning Candidate			Losing Candidate		
	Name and Party		Votes received	Name and Party		Votes received
1	* William A. Barrett	(D)	90,100	Beatrice K. Chernock	(R)	46,280
2	* Robert N. C. Nix, Sr.	(D)	76,372	Herbert R. Cain, Jr.	(R)	51,079
3	* James A. Byrne	(D)	64,575	Walter T. Darmopray	(R)	49,434
4	Joshua Eilberg	(D)	98,793	Robert Baer Cohen	(R)	91,620
5	* William J. Green	(D)	86,128	Michael J. Bednarek	(R)	59,515
6	* George M. Rhodes	(D)	91,538	Daniel B. Boyer, Jr.	(R)	71,508
7	Lawrence G. Williams	(R)	101,042	John J. Logue	(D)	58,766
8	Edward G. Biester, Jr.	(R)	70,435	Walter S. Farley, Jr.	(D)	48,845
9	* G. Robert Watkins	(R)	81,516	Louis F. Waldmann	(D)	48,656
10	* Joseph M. McDade	(R)	115,765	Neil Trama	(D)	57,615
11	* Daniel J. Flood	(D)	110,877	Gerald C. Broadt	(R)	54,032
12	* J. Irving Whalley	(R)	107,374	J. Robert Rohm	(D)	53,044
13	* Richard S. Schweiker	(R)	134,414	William D. Searle	(D)	51,024
14	* William S. Moorhead	(D)	83,967	Richard L. Thornburgh	(R)	39,024
15	* Fred B. Rooney	(D)	80,947	George J. Joseph	(R)	73,404
16	Edwin D. Eshleman	(R)	82,527	Richard F. Charles	(D)	36,721
17	* Herman T. Schneebeli	(R)	109,169	William Conrad Reuter	(D)	55,761
18	* Robert J. Corbett	(R)	107,677	John R. Wohlfarth	(D)	52,714
19	George A. Goodling	(R)	70,445	* N. Neiman Craley, Jr.	(D)	65,907
20	* Elmer J. Holland	(D)	93,068	Joseph Sabol, Jr.	(R)	48,229
21	* John H. Dent	(D)	80,472	Edward B. Byrne	(R)	44,800
22	* John P. Saylor	(R)	103,808	Frank H. Buck	(D)	50,017
23	* Albert W. Johnson	(R)	81,658	Robert W. Mitchell	(D)	48,373
24	* Joseph P. Vigorito	(D)	85,193	James D. Weaver	(R)	68,955
25	* Frank M. Clark	(D)	92,073	John F. Heath	(R)	50,639
26	* Thomas E. Morgan	(D)	83,687	Paul P. Riggle	(R)	46,957
27	* James G. Fulton	(R)	108,731	Stephen J. Arnold	(D)	51,928

\* - Indicates incumbent.

Source: Compiled by the Bureau of Statistics, Department of Internal Affairs, from information supplied by the Bureau of Commissions and Elections, Pennsylvania Department of State, as they appear in the Pennsylvania Statistical Abstract.

**PENNSYLVANIA  
STATE  
SENATORIAL  
DISTRICTS**

TABLE 3: STATE SENATORIAL DISTRICTS IN PENNSYLVANIA

(February 4, 1966)

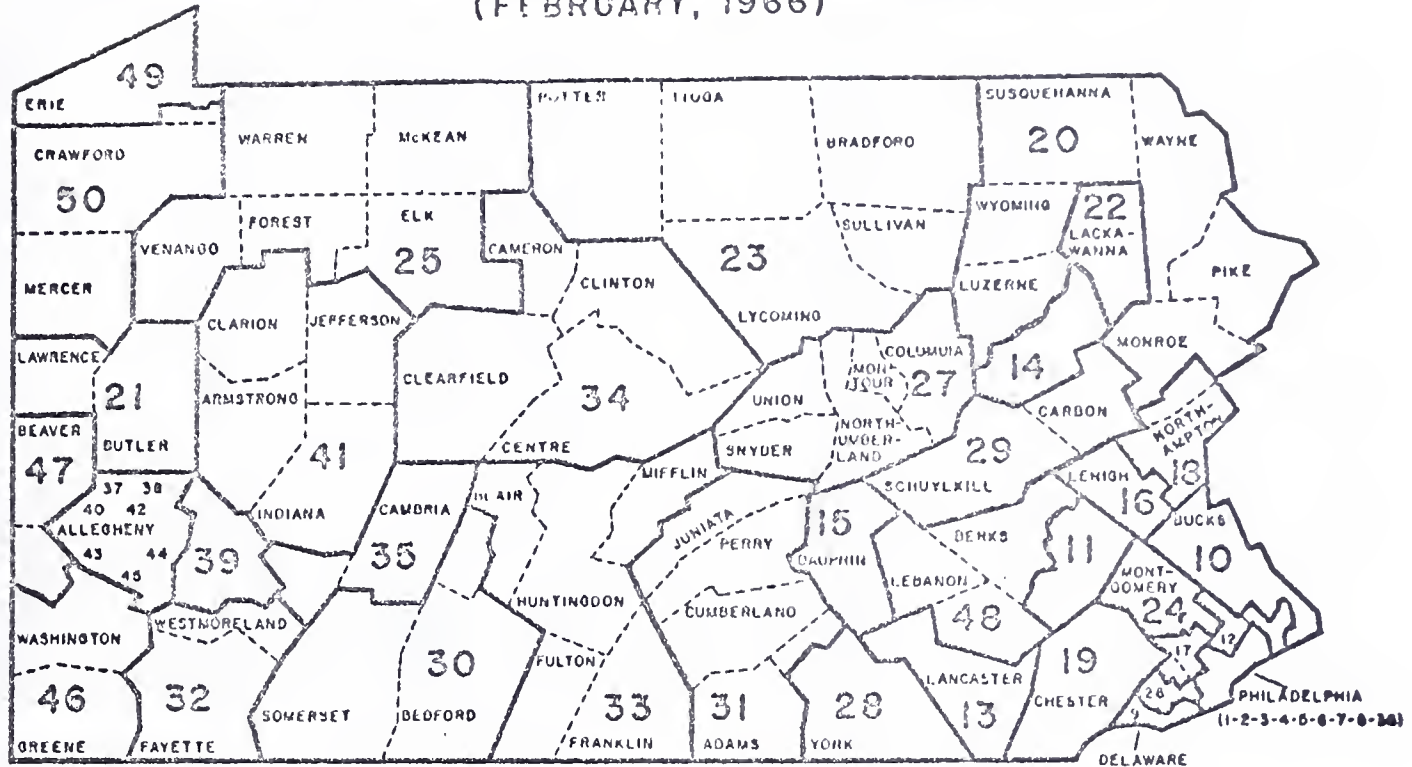
District number	Counties included	1960 population	District number	Counties included	1960 population
1	Philadelphia (part)	238,235	26	Delaware (part)	248,695
2	Philadelphia (part)	220,271	27	Columbia - Montour - North- umberland - Snyder - Union	225,925
3	Philadelphia (part)	221,521	28	York (part)	226,517
4	Philadelphia (part)	240,838	29	Carbon - Schuylkill	225,916
5	Philadelphia (part)	213,437	30	Bedford - Blair (part) - Somerset	221,839
6	Philadelphia (part)	228,498	31	Adams - Cumberland - Juniata - Perry - York (part)	230,997
7	Philadelphia (part)	222,035	32	Fayette - Westmoreland (part)	243,855
8	Philadelphia (part)	207,225	33	Blair (part) - Franklin - Fulton - Huntingdon - Mifflin	217,906
9	Delaware (part)	228,743	34	Cameron - Centre - Clearfield - Clinton	205,319
10	Bucks (part)	231,542	35	Cambria - Westmoreland (part)	235,555
11	Berks (part)	213,553	36	Philadelphia (part)	210,452
12	Bucks (part) - Montgomery (part)	220,518	37	Allegheny (part)	237,829
13	Lancaster (part)	216,134	38	Allegheny (part)	233,003
14	Luzerne (part)	232,500	39	Westmoreland (part)	245,842
15	Dauphin	220,255	40	Allegheny (part)	241,633
16	Lehigh	227,536	41	Armstrong - Clarion - Indiana - Jefferson	239,090
17	Delaware (part) - Montgomery (part)	219,528	42	Allegheny (part)	243,774
18	Monroe (part) - Northampton	224,741	43	Allegheny (part)	232,822
19	Chester	210,608	44	Allegheny (part)	218,410
20	Luzerne (part) - Monroe (part) Pike - Susquehanna - Wayne - Wyoming	218,055	45	Allegheny (part)	221,116
21	Butler - Lawrence	227,604	46	Greene - Washington (part)	233,886
22	Lackawanna	234,531	47	Beaver - Washington (part)	229,757
23	Bradford - Lycoming - Potter - Sullivan - Tioga	223,640	48	Berks (part) - Lancaster (part) - Lebanon	214,939
24	Montgomery (part)	229,377	49	Erie (part)	236,345
25	Elk - Forest - McKean - Venango - Warren	207,207	50	Crawford - Erie (part) - Mercer	219,812

Source: All population figures from U. S. Bureau of the Census, except for wards in Philadelphia which are estimates of the Committee of Seventy.

For specific definitions of Senate Districts see: Senate Bulletin, Mark Gruell, Jr., Secretary, Reapportionment of the Senate by the Pennsylvania Supreme Court, February 4, 1966.



STATE SENATORIAL DISTRICTS  
(FEBRUARY, 1966)



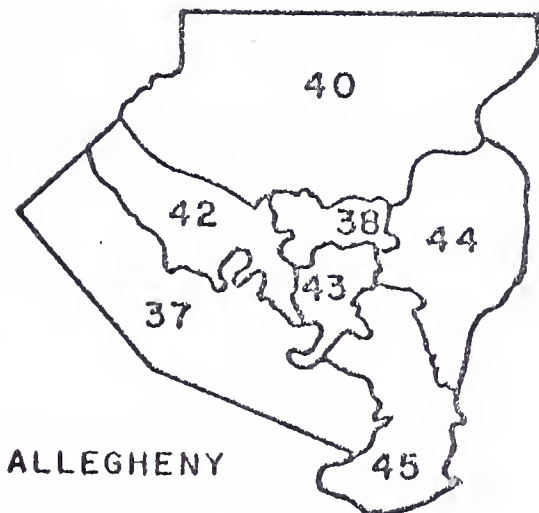
### LEGEND

SENATORIAL DISTRICT LINES \_\_\_\_\_  
COUNTY LINES -----

# SENATORIAL DISTRICTS IN ALLEGHENY AND PHILADELPHIA COUNTIES

(FEBRUARY, 1966)

DEPARTMENT OF INTERNAL AFFAIRS  
NOVEMBER 1966



ALLEGHENY



PHILADELPHIA

TABLE 4 : VOTES CAST FOR MAJOR CANDIDATES FOR THE STATE SENATE  
IN THE GENERAL ELECTION: NOVEMBER 8, 1966

District number	Winning Candidate			Losing Candidate		
	Name and Party		Votes received	Name and Party		Votes received
1	** Henry J. Canfrani	(D)	38,316	David P. Trulli	(R)	32,283
2	* Benjamin R. Donolow	(D)	43,828	Herbert W. Salus, Jr.	(R)	23,822
3	** Herbert Arlene	(D)	37,319	Henry J. Nimmons	(R)	16,335
4	Joseph J. Scanlon	(D)	50,930	Edward R. Becker	(R)	43,783
5	* Herbert J. McGlinchey	(D)	46,399	Richard G. Segal	(R)	33,867
6	John F. Byrne	(D)	62,460	William F. Coyle	(R)	60,019
7	* Charles R. Weiner	(D)	52,669	Oscar N. Gaskins	(R)	21,532
8	* Thomas P. McCreesh	(D)	38,687	Carl A. Verna	(R)	27,732
9	* Clarence D. Bell	(R)	50,521	Donald W. Leavitt	(D)	27,153
10	* Marvin V. Keller	(R)	43,322	Jack L. Ward	(D)	31,000
11	* Gus Yatron	(D)	44,233	Elmer Davis, Jr.	(R)	24,471
12	* Wilmot E. Fleming	(R)	56,494	Raymond B. Reinl	(D)	30,484
13	* Richard A. Snyder	(R)	48,807	George A. DeLong	(D)	4,624
14	Martin L. Murray	(D)	40,799	Victor C. Diehm	(R)	37,999
15	* William B. Lentz	(R)	53,171	Donald J. Rippon	(D)	20,500
16	* John T. Van Sant	(R)	47,900	Walter J. Tray	(D)	28,072
17	** R. Lawrence Coughlin	(R)	63,845	John C. Bonner	(D)	29,263
18	** Jeanette F. Reibman	(D)	47,789	Paul G. Hay	(R)	25,347
19	* John H. Ware, III	(R)	48,726	William H. Mitman	(D)	26,155
20	T. Newell Wood	(R)	48,037	Harold Coslett	(D)	35,486
21	* Donald O. Oesterling	(D)	37,676	Mark L. Rutledge	(R)	35,744
22	Arthur A. Piosecki	(R)	53,325	James J. Haggerty	(D)	51,161
23	* Zehnder H. Confair	(R)	51,401	James E. Pennella	(D)	22,018
24	** Edwin G. Holl	(R)	51,330	Edward F. Kane	(D)	24,545
25	* Richard C. Frame	(R)	25,743	Robert Kunselman	(D)	23,680
26	** Clyde R. Dengler	(R)	71,539	Edward S. Lawhorne	(D)	33,629
27	* Preston B. Davis	(D)	47,935	John M. Linnet	(D)	32,990
28	Henry B. Leader	(D)	(1)	Robert O. Beers	(R)	(1)
29	Frederick H. Hobbs	(R)	51,063	Albert I. Nagle	(D)	39,983
30	* Stanley G. Stroup	(R)	46,795	Mike H. Bigan	(D)	27,796
31	* George N. Wade	(R)	53,817	John A. Carden	(D)	27,293
32	* Thomas J. Kalman	(D)	46,852	Charles Detwiler, Jr.	(R)	28,999
33	* D. Elmer Hawbaker	(R)	43,253	Guy F. Oakman	(D)	24,492
34	* Daniel A. Bailey	(R)	34,564	Jo Hays	(D)	30,720
35	* Richard J. Green, Jr.	(R)	51,476	John J. Haluska	(D)	29,593
36	Louis G. Hill	(D)	44,949	William J. McLaughlin, III	(R)	40,172
37	* Edwin C. Ewing	(R)	56,180	Lawrence V. McInerney	(D)	36,119
38	Stanley M. Noszka	(D)	48,963	Vincent C. Murovick, Jr.	(R)	26,769
39	* Paul W. Mahady	(D)	49,391	Smith McKee, Jr.	(R)	37,836
40	* Robert D. Fleming	(R)	61,980	John Hudak	(D)	32,879
41	* Albert R. Pechan	(R)	46,798	Patrick J. Stapleton, Jr.	(D)	25,730
42	* Thomas F. Lamb	(D)	50,964	Paul L. Behers	(R)	27,550
43	* John H. Devlin	(D)	52,612	Alan Dale Kurtz	(R)	23,378
44	* Jack E. McGregor	(R)	51,127	Anthony J. Martin	(D)	33,657
45	Joseph M. Gaydos	(D)	57,343	Jon Lesko	(R)	22,178
46	* William J. Lane	(D)	49,778	David B. Moses	(R)	27,415
47	* Ernest P. Kline	(D)	50,096	Dean Bricker	(R)	26,057
48	* Clarence F. Manbeck	(R)	39,804	John H. Anspach	(D)	26,190
49	* William G. Sesler	(D)	47,715	James N. Thompson	(R)	33,419
50	** James E. Willard	(R)	37,248	Joseph M. Walton	(D)	32,719

\* - Indicates incumbent.

\*\* - Indicates Member of House prior to candidacy for Senate.

(1) Certified vote not available because of contested election.

Source: Compiled by the Bureau of Statistics, Department of Internal Affairs, from information supplied by the Bureau of Commissions and Elections, Pennsylvania Department of State, as they appear in the Pennsylvania Statistical Abstract.

PENNSYLVANIA  
STATE  
REPRESENTATIVES  
DISTRICTS



TABLE 1: STATE HOUSE OF REPRESENTATIVES DISTRICTS IN PENNSYLVANIA  
(February 4, 1966)

District number	Counties included	1960 population	District number	Counties included	1960 population	District number	Counties included	1960 population
1	Erie (part)	55,267	71	Cambria (part)	56,756	136	Northampton (part)	57,278
2	Erie (part)	55,381	72	Cambria (part)	56,474	137	Northampton (part)	51,138
3	Erie (part)	56,233	73	Cambria (part)	54,130	138	Monroe (part) - Northampton (part)	50,990
4	Erie (part)	53,386	74	Clearfield (part)	62,744	139	Monroe (part) - Pike - Wayne	63,643
5	Crawford (part) - Erie (part)	52,872	75	Cameron - Clinton (part) - Elk	51,282	140	Bucks (part)	51,083
6	Crawford	55,499	76	Centre (part) - Clinton (part)	51,218	141	Bucks (part)	52,113
7	Mercer (part)	63,345	77	Centre (part) - Clearfield (part)	61,414	142	Bucks (part)	51,652
8	Mercer (part)	64,174	78	Bedford - Fulton	53,048	143	Bucks (part)	50,044
9	Lawrence (part)	54,308	79	Blair (part)	62,532	144	Bucks (part)	53,162
10	Lawrence (part)	58,657	80	Blair (part)	61,586	145	Bucks (part)	50,513
11	Butler (part)	56,619	81	Blair (part) - Huntingdon (part)	48,518	146	Montgomery (part)	52,379
12	Butler (part)	56,020	82	Huntingdon (part) - Mifflin (part)	48,439	147	Montgomery (part)	54,812
13	Beaver (part)	50,198	83	Lycoming (part)	51,014	148	Montgomery (part)	58,631
14	Beaver (part)	50,584	84	Lycoming (part)	58,353	149	Montgomery (part)	64,529
15	Beaver (part)	54,669	85	Snyder - Union	51,568	150	Montgomery (part)	55,040
16	Beaver (part)	51,497	86	Cumberland (part) - Juniata - Perry	48,356	151	Montgomery (part)	56,962
17	Allegheny (part)	55,825	87	Cumberland (part)	55,079	152	Montgomery (part)	54,252
18	Allegheny (part)	53,315	88	Cumberland (part)	54,314	153	Montgomery (part)	58,418
19	Allegheny (part)	57,796	89	Cumberland (part) - Franklin (part)	48,587	154	Montgomery (part)	61,659
20	Allegheny (part)	57,499	90	Franklin (part)	49,106	155	Chester (part)	53,213
21	Allegheny (part)	50,376	91	Adams	51,906	156	Chester (part)	52,048
22	Allegheny (part)	51,251	92	York (part)	60,120	157	Chester (part)	52,485
23	Allegheny (part)	51,601	93	York (part)	58,978	158	Chester (part)	52,862
24	Allegheny (part)	50,690	94	York (part)	59,208	159	Delaware (part)	51,809
25	Allegheny (part)	61,198	95	York (part)	60,030	160	Delaware (part)	50,188
26	Allegheny (part)	63,423	96	Lancaster (part)	61,055	161	Delaware (part)	61,797
27	Allegheny (part)	57,138	97	Lancaster (part)	50,789	162	Delaware (part)	53,355
28	Allegheny (part)	57,952	98	Lancaster (part)	57,105	163	Delaware (part)	53,284
29	Allegheny (part)	63,587	99	Lancaster (part)	47,908	164	Delaware (part)	61,649
30	Allegheny (part)	62,905	100	Lancaster (part)	49,244	165	Delaware (part)	60,485
31	Allegheny (part)	60,304	101	Lebanon (part)	51,908	166	Delaware (part)	54,019
32	Allegheny (part)	57,629	102	Lancaster (part) - Lebanon (part)	51,203	167	Delaware (part)	53,281
33	Allegheny (part)	57,070	103	Dauphin (part)	53,979	168	Delaware (part)	49,287
34	Allegheny (part)	56,698	104	Dauphin (part)	48,779	169	Philadelphia (part)	53,921
35	Allegheny (part)	53,341	105	Dauphin (part)	54,825	170	Philadelphia (part)	51,425
36	Allegheny (part)	51,596	106	Dauphin (part)	62,672	171	Philadelphia (part)	54,454
37	Allegheny (part)	57,350	107	Northumberland (part)	60,357	172	Philadelphia (part)	53,173
38	Allegheny (part)	53,060	108	Montour - Northumberland (part)	60,511	173	Philadelphia (part)	49,654
39	Allegheny (part)	60,200	109	Columbia	53,489	174	Philadelphia (part)	57,656
40	Allegheny (part)	57,095	110	Bradford	54,925	175	Philadelphia (part)	63,472
41	Allegheny (part)	54,270	111	Sullivan - Susquehanna - Wyoming	56,201	176	Philadelphia (part)	63,506
42	Allegheny (part)	63,299	112	Lackawanna (part)	55,074	177	Philadelphia (part)	59,329
43	Allegheny (part)	50,301	113	Lackawanna (part)	56,369	178	Philadelphia (part)	53,296
44	Allegheny (part)	51,519	114	Lackawanna (part)	61,301	179	Philadelphia (part)	56,387
45	Allegheny (part)	50,699	115	Lackawanna (part)	61,787	180	Philadelphia (part)	58,127
46	Washington (part)	50,156	116	Luzerne (part)	57,078	181	Philadelphia (part)	54,936
47	Washington (part)	49,398	117	Luzerne (part)	58,437	182	Philadelphia (part)	55,107
48	Washington (part)	49,117	118	Luzerne (part)	52,162	183	Philadelphia (part)	61,237
49	Washington (part)	55,264	119	Luzerne (part)	57,538	184	Philadelphia (part)	63,360
50	Greene - Washington (part)	52,760	120	Luzerne (part)	58,206	185	Philadelphia (part)	57,124
51	Fayette (part)	55,113	121	Luzerne (part)	63,551	186	Philadelphia (part)	55,519
52	Fayette (part)	54,958	122	Carbon	52,889	187	Philadelphia (part)	51,928
53	Fayette (part)	59,269	123	Schuylkill (part)	58,731	188	Philadelphia (part)	58,039
54	Westmoreland (part)	62,373	124	Schuylkill (part)	58,790	189	Philadelphia (part)	60,589
55	Westmoreland (part)	55,045	125	Schuylkill (part)	55,506	190	Philadelphia (part)	60,467
56	Westmoreland (part)	59,859	126	Berks (part)	48,551	191	Philadelphia (part)	56,158
57	Westmoreland (part)	63,261	127	Berks (part)	49,626	192	Philadelphia (part)	50,896
58	Westmoreland (part)	63,044	128	Berks (part)	59,639	193	Philadelphia (part)	57,724
59	Westmoreland (part) - Armstrong (part)	49,047	129	Berks (part)	56,817	194	Philadelphia (part)	58,288
60	Indiana (part)	53,959	130	Berks (part)	60,781	195	Philadelphia (part)	54,816
61	Armstrong (part)	48,363	131	Lehigh (part)	53,407	196	Philadelphia (part)	52,795
62	Indiana (part)	52,568	132	Lehigh (part)	54,940	197	Philadelphia (part)	56,584
63	Clarion - Venango (part)	48,098	133	Lehigh (part)	60,817	198	Philadelphia (part)	56,734
64	Venango (part)	54,605	134	Lehigh (part)	58,372	199	Philadelphia (part)	60,079
65	Forest - Warren	50,067	135	Northampton (part)	55,325	200	Philadelphia (part)	64,660
66	Clearfield (part) - Jefferson	62,781				201	Philadelphia (part)	60,661
67	McKean	54,517				202	Philadelphia (part)	58,856
68	Potter - Tioga	53,097				203	Philadelphia (part)	59,555
69	Somerset (part)	57,355						
70	Cambria (part) - Somerset (part)	56,018						

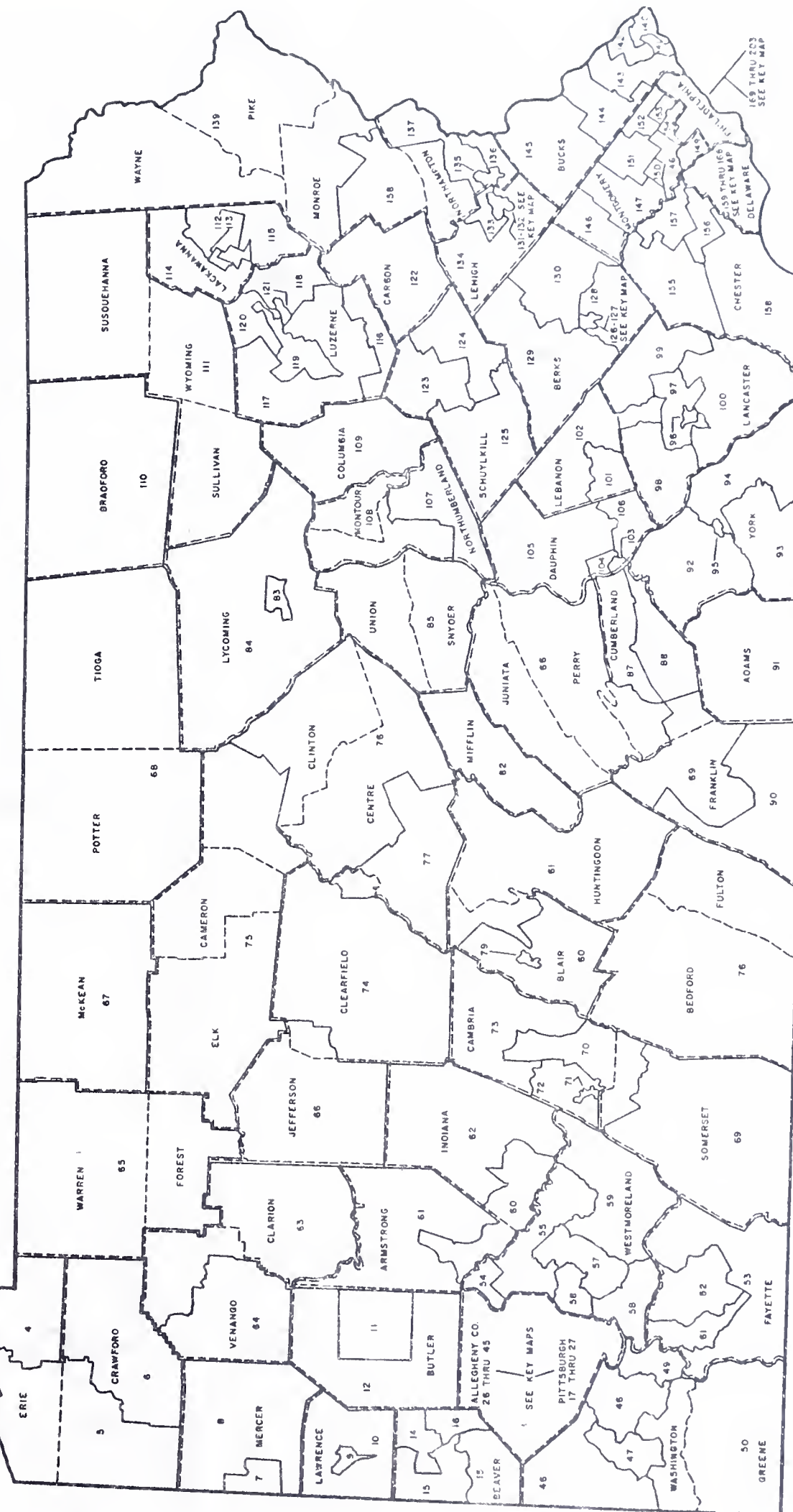
Source: All population figures from U. S. Bureau of the Census, except for wards in Philadelphia which are estimates of the Committee of Seventy.

For specific definitions of Representative Districts see: Senate Bulletin, Mark Gruell, Jr., Secretary, Reapportionment of the House of Representatives by the Pennsylvania Supreme Court, February 4, 1966, and Additions and Corrections on Legislative Reapportionment Decisions as Issued by The Pennsylvania Supreme Court.

# STATE HOUSE OF REPRESENTATIVES DISTRICTS

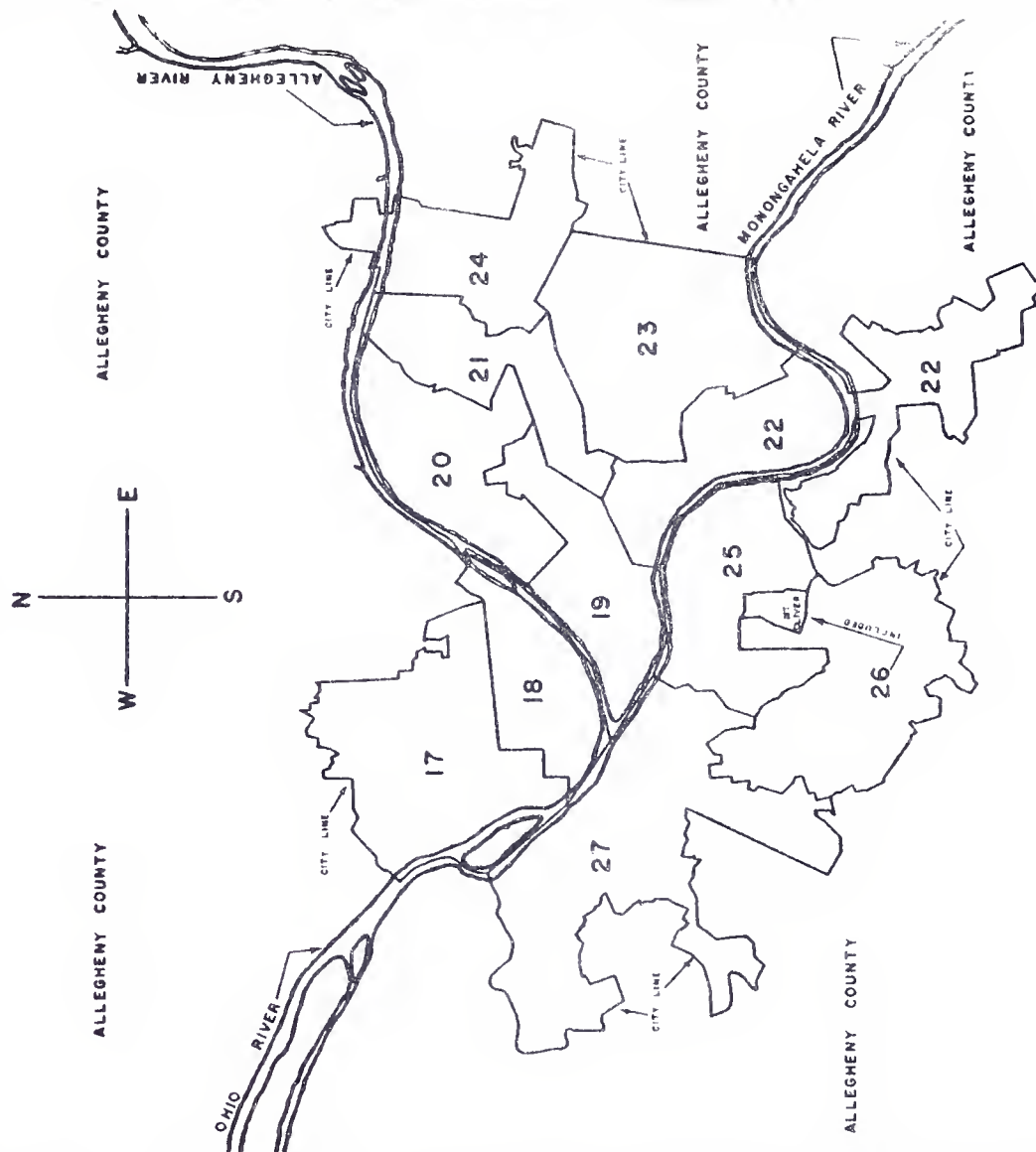
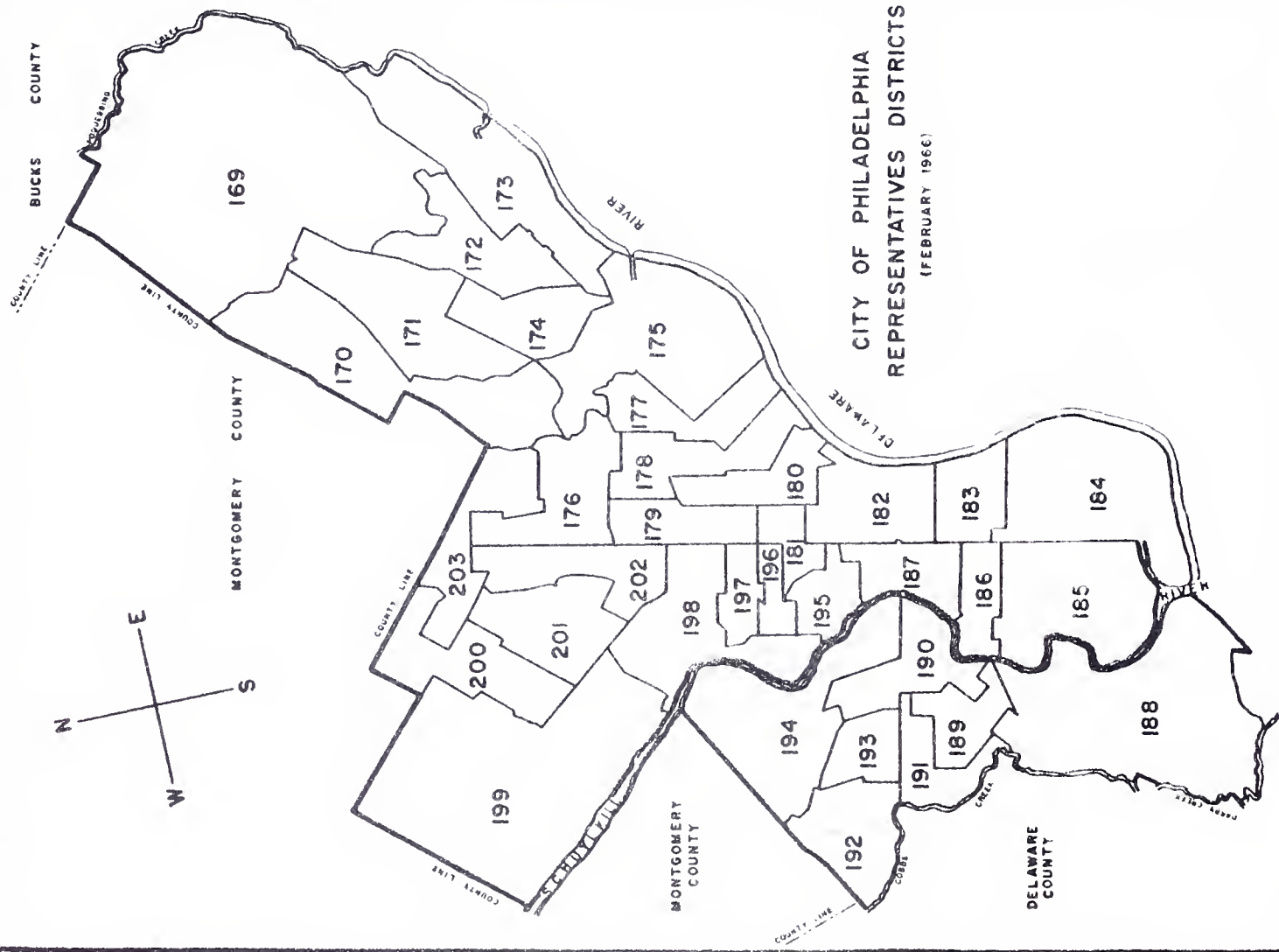
(FEBRUARY, 1966)

1-2-5, ERIE CITY  
SEE KEY MAP



DEPARTMENT OF INTERNAL AFFAIRS  
NOVEMBER 1966

LEGEND  
STATE REPRESENTATIVES DISTRICT LINES  
COUNTY LINES



DEPARTMENT OF INTERNAL AFFAIRS  
 NOVEMBER 1966



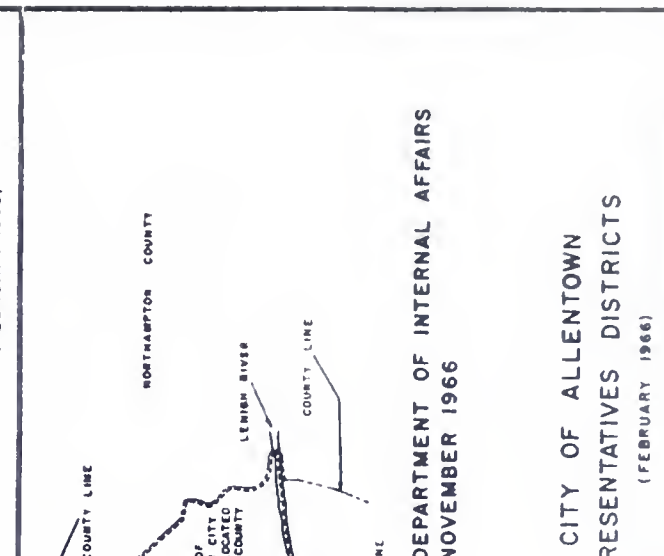
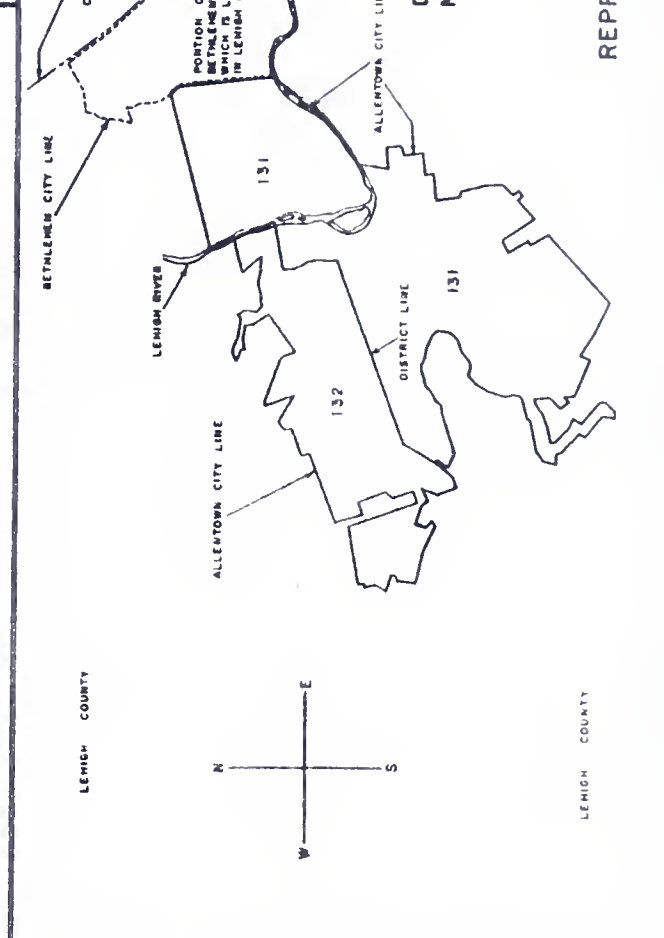
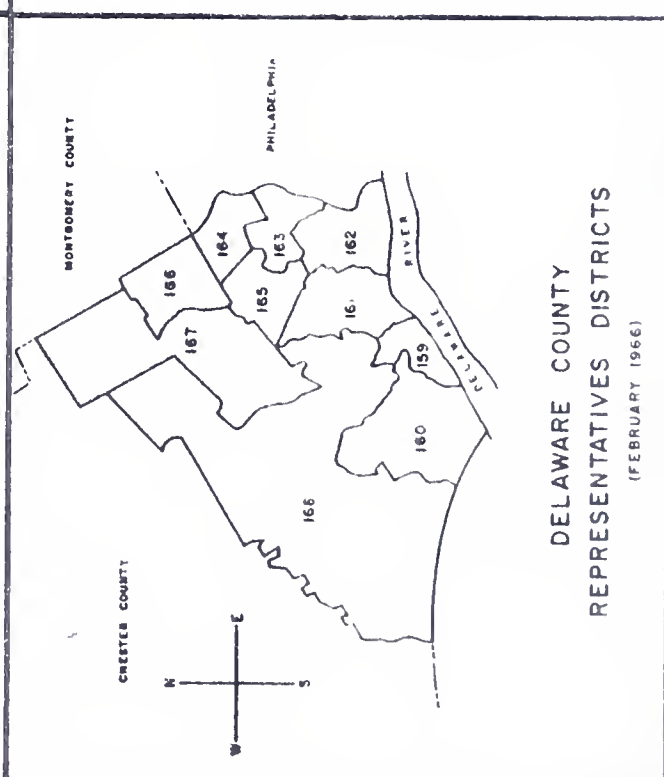
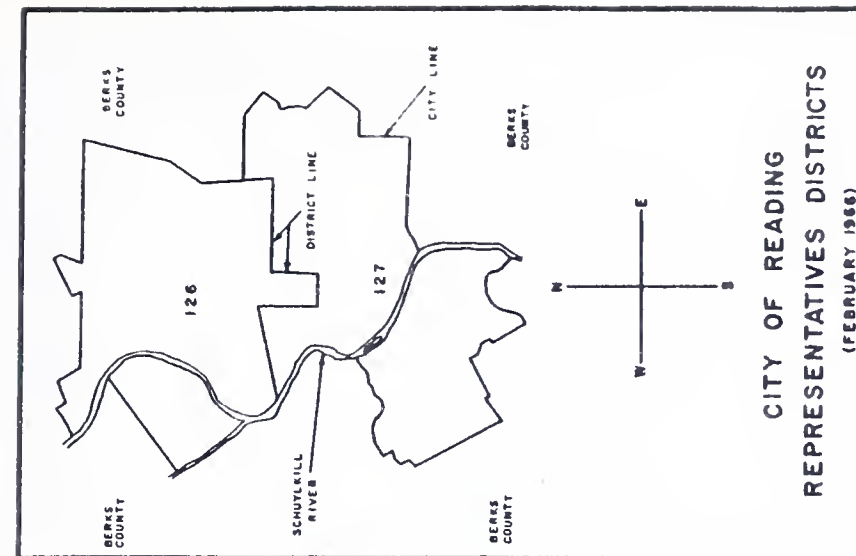
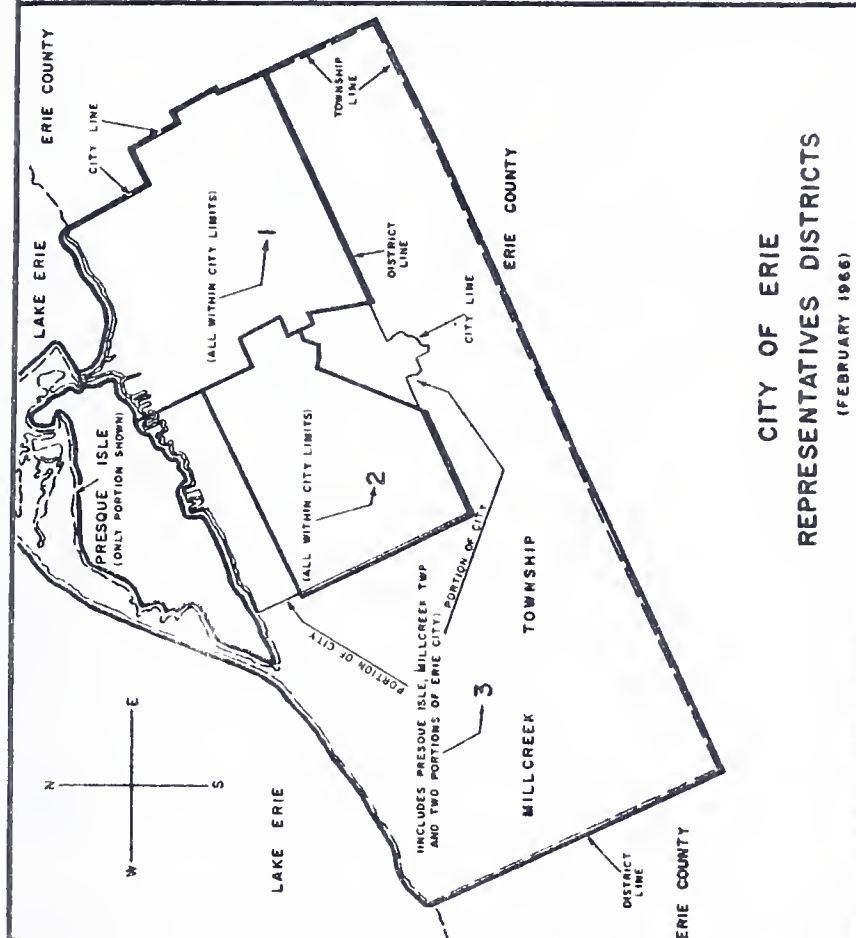
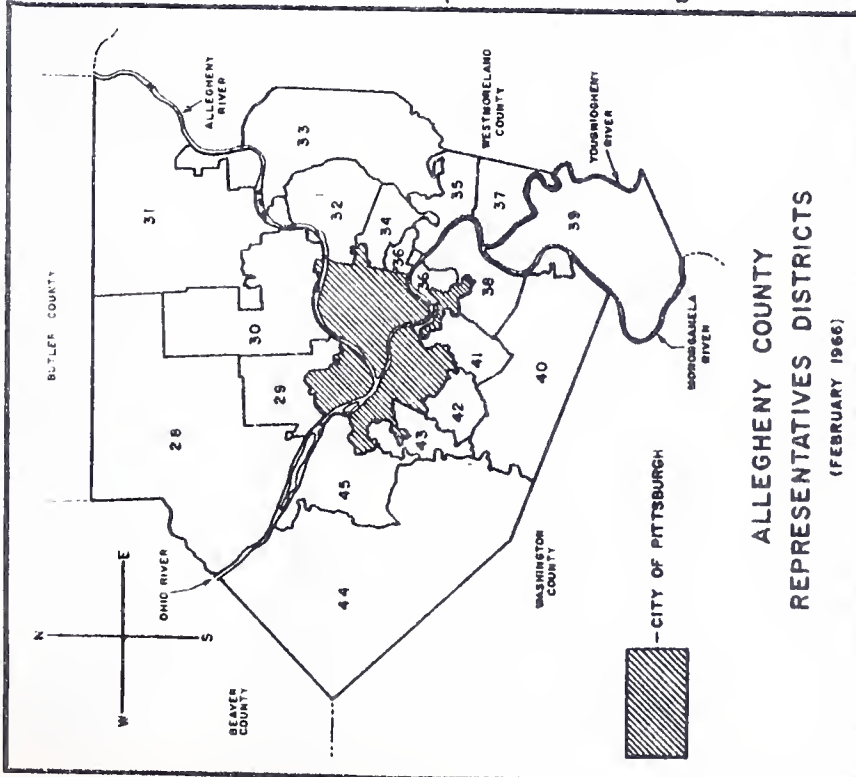


TABLE 6 : VOTES CAST FOR THE TWO MAJOR PARTY CANDIDATES FOR STATE REPRESENTATIVES  
IN THE GENERAL ELECTION, NOVEMBER 8, 1966

District number	Winning Candidate			Losing Candidate		
	Name and Party		Votes received	Name and Party		Votes received
1	* Frank Polaski	(D)	14,275	Eugene Eckerson	(R)	5,558
2	* Robert E. Bellomini	(D)	11,980	Carl W. Tiffany	(R)	6,621
3	Wendell R. Good	(R)	11,574	Jude William Shanahan	(D)	7,315
4	Forest Hopkins	(R)	10,551	Gene A. Heuser	(D)	6,697
5	* Stanley L. Blair	(R)	10,301	Larry M. Sawdy	(D)	7,559
6	* R. Budd Dwyer	(R)	12,524	Carmin E. Grasso	(D)	5,498
7	* Reid L. Bennett	(D)	11,472	Francis L. Biggins	(R)	8,729
8	John Ellis Blair	(R)	13,275	Patrick E. Bradley	(D)	1,943
9	* Dominick E. Cioffi	(D)	9,861	Robert L. Pearsall	(R)	7,071
10	* Donald W. Fox	(R)	11,663	John Robert Grant	(D)	7,704
11	Thomas W. King, Jr.	(R)	9,647	Thomas J. Tiberi	(D)	8,768
12	* H. Francis Kennedy	(R)	12,319	James Edward Bartley	(D)	6,262
13	Robert O. Davis	(R)	9,132	Samuel J. Gelfo	(D)	8,292
14	* Ronald G. Lench	(D)	8,525	Chester C. Roser	(R)	7,609
15	* Charles D. Stone	(D)	13,185	Philip T. Starr	(R)	5,444
16	* Robert K. Hamilton	(D)	12,116	James E. Carnegie	(R)	4,840
17	* Thomas J. Foerster	(D)	11,158	John J. Vaughan	(R)	6,880
18	* Andrew T. Fenrich	(D)	9,254	Walter Gonlin	(R)	3,767
19	* K. Leroy Irvis	(D)	12,607	Louis Kendrick	(R)	3,306
20	Paul W. Miller	(D)	15,247	Henry W. Karbowski	(R)	6,047
21	* Joseph P. Rigby	(R)	8,655	Ralph D. Tive	(D)	8,268
22	* James F. Clarke	(D)	10,819	Paul Markovits	(R)	3,929
23	Gerald Kaufman	(D)	10,743	Harry Markovitz	(R)	10,428
24	* Theodore Johnson	(D)	10,135	C. Leroy Hacker	(R)	3,673
25	* Paul F. Lutty	(D)	13,958	Edward L. Lange	(R)	4,500
26	Charles N. Caputo	(D)	12,234	Richard W. Richards	(R)	11,364
27	Robert A. Geisler	(D)	10,527	James J. Rafferty	(R)	8,209
28	* William M. Appleton	(R)	15,795	John T. Johnson, III	(D)	6,490
29	* Raymond E. Wilt	(R)	14,987	John R. McGrath	(D)	12,432
30	* Lee A. Donaldson, Jr.	(R)	16,771	John T. Somerfield	(D)	9,617
31	Helen D. Gillette	(D)	11,461	John H. Smith	(R)	7,837
32	* Edward L. Dardanell	(D)	11,833	Henry P. Otto	(R)	10,926
33	* Joseph F. Bonetto	(D)	12,824	Paul S. Kramer	(R)	9,490
34	* Earl S. Walker	(R)	11,415	John J. Murray	(D)	8,427
35	Curtis Clay	(D)	12,158	Pat Festa	(R)	5,522
36	John T. McMonagle	(D)	13,299	Jack C. Fisher	(R)	8,392
37	* John T. Walsh	(D)	11,771	Robert T. Messner	(R)	8,240
38	* Jules Filo	(D)	12,633	Charles T. Petratis	(R)	7,539
39	* Edward P. Zemprelli	(D)	12,050	William R. Benedetti	(R)	9,425
40	* Donald O. Bair	(R)	14,159	Ludvick Zupancic	(D)	9,565
41	* Joseph V. Zord, Jr.	(R)	11,575	Samuel L. McPherson	(D)	10,062
42	H. Sheldon Parker, Jr.	(R)	18,792	Walter S. Feeney	(D)	7,957
43	* George K. Haudenshield	(R)	9,938	James H. Voyer	(D)	8,832
44	Andrew J. McGraw	(D)	9,412	Samuel F. Camp	(R)	7,486
45	* Max H. Homer	(D)	10,377	Walter I. Wickline, Jr.	(R)	8,859
46	* John L. Brunner	(D)	9,778	S. A. Bugay	(R)	5,654
47	Roger Raymond Fischer	(R)	8,464	Edward W. Abel	(D)	6,718
48	* Austin J. Murphy	(D)	10,262	Curt L. Naeser	(R)	7,947
49	A. J. DeMedio	(D)	12,616	James W. Heffran	(R)	5,937
50	* Russell E. Headlee	(D)	11,007	Raymond McCracken	(R)	6,117
51	Fred Taylor	(D)	9,953	William M. Wheeler	(R)	7,183
52	Russell J. Blair	(D)	10,114	Albert Mong, Jr.	(R)	5,522
53	Marion C. Klingensmith	(R)	9,058	Telio Packroni	(D)	8,762
54	* C. L. Schmitt	(D)	14,421	G. Richard Olinger	(R)	6,445
55	* Gust L. Stemmler	(D)	9,812	Blair A. Griffith	(R)	9,279
56	* John F. Laudadio, Sr.	(D)	13,984	Thomas R. Harrison	(R)	7,525
57	William N. Tuscano	(R)	11,905	James A. Ferace	(D)	11,157
58	James J. Manderino	(D)	13,901	Glen G. Anderson	(R)	8,407
59	Eugene G. Saloom	(R)	8,455	Frank G. Novak	(D)	8,366
60	C. Doyle Steele	(D)	10,993	Harry Woodruff Turner	(R)	7,831
61	Wm. H. Claypoole	(R)	10,242	Frank A. Pfaff	(D)	6,067
62	* William G. Buchanon	(R)	12,112	L. Jack Summerfield	(D)	5,412
63	* George W. Alexander	(R)	9,892	Willard D. Hayes	(D)	6,072
64	* Alvin Kahle	(R)	7,685	Robert P. Lewis	(D)	5,057
65	W. C. Fuelhart	(R)	8,017	Thomas J. Donnelly	(D)	6,964
66	* L. Eugene Smith	(R)	13,727	Robert M. Melton	(D)	8,428
67	* Victor J. Westerberg	(R)	8,915	Jack Still	(D)	5,170
68	* Warren H. Spencer	(R)	12,422	Warren D. White	(D)	5,488
69	Kenneth S. Halverson	(R)	11,180	Peter T. Dumbauld	(D)	10,178
70	* Harry A. Englehart, Jr.	(D)	10,752	George A. Dayoob	(R)	9,463
71	* Joseph J. McAneny	(D)	9,917	Owen W. Wissinger	(R)	8,477
72	* Edward W. McNally	(D)	13,513	William E. Carroll	(R)	8,373
73	* Paul J. Yahner	(D)	12,465	Roger A. Naylor	(R)	5,603
74	Austin M. Harrier	(R)	11,617	Edmund J. Zitzelberger	(D)	9,223
75	* William F. Renwick	(D)	9,378	George L. Daghir	(R)	7,893

(continued on following page)

District number	Winning Candidate			Losing Candidate		
	Name and Party		Votes received	Name and Party		Votes received
76	* W. Max Bosaert	(R)	9,213	J. Kenneth Sorgen	(D)	6,738
77	* Eugene M. Fulmer	(R)	9,078	Daniel R. Clemson	(D)	9,029
78	* Percy G. Foor	(R)	11,695	Elmer C. Claycomb	(D)	8,173
79	* Robert E. Clarke	(R)	10,693	Chadwick B. Crumlin	(D)	8,057
80	* W. William Wilt	(R)	13,070	Donn Kinzle	(D)	5,805
81	* Orville Eugene Snare	(R)	8,944	William E. Clark	(D)	5,585
82	* W. Brady Hetrick	(D)	8,330	Mervin B. Krentzman	(R)	5,263
83	* Robert C. Wise	(D)	8,254	L. Harold Wagner	(R)	7,401
84	* Alvin C. Bush	(R)	13,416	Robert H. Abbott	(D)	7,124
85	* Harvey P. Murray, Jr.	(R)	12,244	Elmer G. Snyder	(D)	4,128
86	* Allan W. Holman, Jr.	(R)	11,239	Samuel P. Nulton	(D)	7,757
87	* Guy A. Kistler	(R)	13,944	Maurice W. Downey	(D)	6,287
88	* Lourene W. George	(R)	12,555	Russell Davis	(D)	5,924
89	* Emos H. Horst	(R)	9,828	Thomas H. Crider	(D)	6,600
90	* William O. Shuman	(D)	9,158	Alvin A. Hicks	(R)	6,404
91	* Francis Worley	(R)	9,997	Chester C. Hoff	(D)	6,708
92	* Jane M. Alexander	(D)	10,753	Stanley H. Gross	(R)	9,177
93	* (1) Harold B. Rudisill	(D)	8,883	Harold B. Rudisill	(R)	8,728
94	* (1) John Hope Anderson	(R)	12,318	John Hope Anderson	(D)	8,436
95	* John R. Gailey, Jr.	(D)	9,109	Rodney L. Stauffer	(R)	7,503
96	Eugene S. Rutherford	(R)	9,586	John C. Pittenger	(D)	9,090
97	Marvin E. Miller	(R)	15,437	George M. Ament	(D)	4,315
98	* Jack B. Horner	(R)	11,578	John E. Spicer	(D)	5,689
99	Harry H. Gring	(R)	9,135	Paul F. Grebinger	(D)	3,169
100	* Sherman L. Hill	(R)	11,759	William W. Wipprecht	(D)	3,630
101	* H. Jack Seltzer	(R)	11,648	Nathan D. Grosky	(D)	4,972
102	Harvey L. Nitrauer	(R)	9,135	Gertrude M. Trautman	(D)	6,123
103	George W. Gekas	(R)	11,848	Sidney Rubenstein	(D)	4,674
104	* H. Joseph Hepford	(R)	12,822	Gerald K. Merritt	(D)	4,794
105	Miles B. Zimmerman, Jr.	(R)	14,708	Edwin V. Jeszenka	(D)	6,706
106	Rudolph Dininni	(R)	12,262	Bayard T. D. Reider	(D)	6,706
107	* Paul G. Ruane	(R)	15,605	Michael Stewart	(D)	9,363
108	Franklin L. Kury	(D)	10,564	Adam T. Bower	(R)	9,625
109	* Kent D. Shelhamer	(D)	10,325	Amin A. Alley	(R)	9,691
110	* (2) Evan S. Williams	(R)	13,166			
111	* Kenneth B. Lee	(R)	15,845	Leo A. White	(D)	7,253
112	Charles Luger	(R)	11,789	Cyril J. Moran	(D)	10,976
113	* Michael J. Needham	(D)	12,175	Louis R. Costanzo	(R)	11,878
114	* John Wansacz	(D)	14,539	William Edwards	(R)	14,046
115	* Joseph G. Wargo	(D)	16,649	John K. Nagy	(R)	12,225
116	* William T. Bachman	(D)	11,774	Louis A. Amentler	(R)	7,740
117	* Stanley A. Meholchick	(D)	11,319	William S. Samuel	(R)	10,458
118	* James Musto	(D)	12,203	Charles H. Kresge	(R)	6,682
119	* Fred J. Shupnik	(D)	13,623	James S. Croop	(R)	7,343
120	Frank J. O'Connell, Jr.	(R)	13,285	William R. Keller	(D)	8,373
121	* Bernard F. O'Brien	(D)	12,751	Harry E. Jones	(R)	8,904
122	Joseph Semanoff	(R)	10,126	Marguerite Bonner	(D)	9,697
123	George A. Uritis	(R)	13,614	James A. Goodman	(D)	12,983
124	Frank M. Allen	(R)	13,534	Gilbert J. Allison	(D)	9,528
125	Joseph H. Manbeck	(R)	13,776	Walter M. Breen	(D)	7,991
126	Robert R. Gerhart, Jr.	(D)	9,768	Asa J. Strong	(R)	6,682
127	* Russell J. LaMarca	(D)	9,438	Stephen J. Karabinos	(R)	3,806
128	* James J. Gallen	(R)	13,885	John A. Fischer	(D)	8,830
129	* William G. Piper	(R)	10,838	Stephen G. Wanner	(D)	8,167
130	* Lester K. Fryer	(D)	10,364	Carl L. Spence	(R)	8,398
131	* James P. Ritter	(D)	9,060	Franklin C. Weaver	(R)	7,431
132	* Samuel W. Frank	(D)	8,976	Wilbur K. Gilbert	(R)	8,771
133	* William H. Eckensberger	(D)	12,239	Allen S. Zimmerman	(R)	8,833
134	* Marian E. Markley	(R)	13,773	Joseph J. Craig	(D)	6,692
135	William C. Rybak	(D)	10,814	Edwin H. Koons, Jr.	(R)	6,660
136	* James F. Prendergast	(D)	10,895	Henry E. Ragot	(R)	6,209
137	Philip S. Ruggerio	(D)	10,275	Wilbur L. Hemstreet	(R)	9,261
138	* Russell Kowalyshyn	(D)	9,952	Paul R. Russell	(R)	7,082
139	* J. Russell Eshback	(R)	16,288	Stuart F. Pipher	(D)	9,209
140	Milton Berkes	(D)	8,626	Walter W. Jackson	(R)	6,037
141	* James J. A. Gallagher	(D)	6,894	Robert L. White	(R)	6,077
142	* James L. Wright, Jr.	(R)	10,356	John J. Collins	(D)	7,070
143	* John S. Renninger	(R)	11,219	Charles P. Palumbo	(D)	6,369
144	Benjamin H. Wilson	(R)	14,531	Arthur J. Stump	(D)	7,008
145	Marvin D. Weidner	(R)	9,093	Samuel A. Litzenberger	(D)	5,828
146	* Herbert R. Maack	(R)	9,795	Charles A. Dasch	(D)	6,590
147	* G. Seiber Pancoast	(R)	12,502	Harlan T. Haman	(D)	4,283
148	Joseph L. Torak	(R)	13,232	John F. Huber, III	(D)	9,420
149	Richard A. Lilghman	(R)	20,989	William M. Goldstein	(D)	8,478
150	* Robert J. Butera	(R)	10,851	Leonard J. D. Myers	(D)	5,967

(continued on following page)



TABLE 6 : (continued)

District number	Winning Candidate			Losing Candidate		
	Name and Party		Votes received	Name and Party		Votes received
151	Charles H. Dager	(R)	15,315	John P. Greene	(D)	5,585
152	* Charles G. Nicholson	(R)	16,244	Charles J. McNamara, Jr.	(D)	6,749
153	Daniel E. Beren	(R)	17,280	Eugene M. Schloss, Jr.	(D)	7,123
154	* Charles F. Mebus	(R)	18,416	Richard G. Gross	(D)	10,677
155	* C. Timothy Slack	(R)	10,262	James A. McGuigan	(D)	7,505
156	* William H. Ashton	(R)	14,204	John J. Duffy	(D)	6,231
157	* John Stauffer, Jr.	(R)	13,764	Janice Kane	(D)	5,721
158	* Benjamin J. Reynolds	(R)	11,615	Marshall Buchanan	(D)	5,703
159	Thomas H. Worrilow	(R)	8,929	Lacius C. Norris	(D)	5,028
160	* Stanley P. Kester	(R)	9,607	Thomas B. Luke	(D)	6,311
161	* Edward B. Mifflin	(R)	14,874	Edward P. Thompson	(D)	8,364
162	Joseph W. Dorsey	(R)	12,496	Thomas P. Kimmel	(D)	9,131
163	* Mae W. Kernaghan	(R)	12,995	Evelyn Hess	(D)	9,138
164	Francis J. Lynch	(R)	17,664	Madaline E. Maloney	(D)	8,529
165	Donald M. McCurdy	(R)	17,311	Jack (John) Cashmers	(D)	6,987
166	George P. Johnson	(R)	14,900	William E. Mowatt	(D)	8,609
167	* Rocco A. Odorisio	(R)	16,280	Joseph M. Hartley, Jr.	(D)	7,426
168	* Matthew J. Ryan	(R)	14,404	Robert L. Rapp	(D)	5,889
169	Joseph W. Lain	(R)	21,561	Melvin J. Greenberg	(D)	18,791
170	Thomas J. Gola	(R)	13,897	Paul Leo McSorley	(D)	11,574
171	Roland Greenfield	(D)	18,887	Anna L. Budde	(R)	11,125
172	Edward H. Hipple	(R)	12,265	Alfred W. Dieterle	(D)	10,851
173	Robert A. Johnson	(D)	9,438	Walter A. Wetzel	(R)	8,931
174	Max Pievsky	(D)	14,113	Edward H. Povner	(R)	12,343
175	* John Pezak	(D)	11,059	Gregory J. Meade	(R)	10,881
176	* Louis Sherman	(D)	16,611	John Odezynsky	(R)	10,757
177	* Joseph A. Sullivan	(D)	12,317	Joseph P. Zawrotny	(R)	11,048
178	* Harry R. J. Comer	(D)	10,321	John J. Poserina, Jr.	(R)	9,216
179	William W. Rieger	(D)	12,386	Edward M. Lloyd	(R)	5,515
180	* William J. Lederer	(D)	8,588	John P. Lynn	(R)	6,964
181	* Ulysses Shelton	(D)	7,541	Henry Branch	(R)	1,831
182	* Arthur Rubin	(D)	7,532	Philip Price, Jr.	(R)	5,694
183	Salvatore DeMeo	(R)	11,685	John J. Fralinger, Jr.	(D)	10,519
184	Leland M. Beloff	(R)	11,638	Jack Litz	(D)	11,228
185	Matthew F. Coppolino	(R)	11,518	Vincent F. Scarcelli	(D)	10,989
186	Earl Vann	(D)	13,840	Aubrey R. Newlin, Jr.	(R)	4,929
187	Norman S. Berson	(D)	10,939	Roger W. Whittlesey	(R)	8,232
188	* James P. O'Donnell	(D)	10,080	Francis X. McDonough	(R)	9,514
189	* Martin P. Mullen	(D)	13,372	Mae L. Kinzer	(R)	7,253
190	* Freeman Hankins	(D)	9,083	William F. Hayward	(R)	4,067
191	* Paul M. Lawson	(D)	14,704	Augustineo L. Bolano	(R)	3,618
192	* Anita Palermo Kelly	(D)	11,631	Anthony Amen	(R)	8,096
193	* Sarah A. Anderson	(D)	12,969	Ethel L. Calhoun	(R)	4,391
194	* Herbert Fineman	(D)	15,724	David Brodsky	(R)	4,454
195	Francis J. Lynch	(D)	8,704	Victor L. Joell	(R)	4,379
196	* Susie Monroe	(D)	7,630	Wilbur C. Bowers	(R)	2,714
197	* Junius M. Emerson	(D)	9,961	Andrew P. Grant	(R)	2,594
198	* John J. Welsh	(D)	8,553	Michael Pasquarello, Jr.	(R)	7,004
199	* John H. Hamilton, Jr.	(R)	17,424	Peter C. Paul	(D)	9,667
200	Bernard M. Gross	(D)	17,576	Marvin Joseph Levin	(R)	10,248
201	Francis J. Rush	(D)	10,063	Dominic T. Spagnoletti	(R)	8,655
202	* Eugene Gelfand	(D)	12,181	Robert H. Miller, 3rd	(R)	7,781
203	* Peter E. Perry	(D)	13,335	Gerald R. Walsh	(R)	12,402

\* - Indicates incumbent.

(1) Candidate was cross-filed.

(2) Candidate had no opponent.

Source: Compiled by the Bureau of Statistics, Department of Internal Affairs from tabulated worksheets in the Pennsylvania Department of State, Bureau of Commissions and Elections, as they appear in the Pennsylvania Statistical Abstract.

TABLE 7 : NUMBER OF VOTES FOR GOVERNOR, LIEUTENANT GOVERNOR, AND SECRETARY OF  
INTERNAL AFFAIRS, BY COUNTY: GENERAL ELECTION OF NOVEMBER 8, 1966

	Governor		Lieutenant Governor		Secretary of Internal Affairs	
	Shafer	Shapp	Broderick	Staisey	Tabor	Blatt
Total (1)	2, 110, 349	1, 868, 719	1, 992, 954	1, 931, 841	1, 993, 347	1, 926, 897
Adams	10, 470	6, 054	10, 034	6, 402	9, 513	7, 057
Allegheny	274, 577	310, 449	234, 243	348, 172	263, 195	317, 656
Armstrong	14, 663	12, 497	13, 466	13, 544	14, 272	12, 710
Beaver	29, 737	39, 298	26, 427	42, 303	29, 065	39, 526
Bedford	10, 079	5, 796	9, 579	6, 125	9, 699	6, 143
Berks	47, 303	42, 838	42, 632	45, 598	39, 985	48, 497
Blair	24, 817	15, 855	24, 865	15, 700	24, 558	16, 233
Bradford	11, 868	5, 007	11, 647	5, 059	11, 211	6, 425
Bucks	57, 525	42, 063	56, 240	42, 370	54, 370	44, 558
Butler	21, 784	15, 281	19, 790	16, 686	20, 312	16, 140
Cambria	36, 847	34, 318	34, 205	36, 266	33, 364	36, 398
Cameron	1, 695	988	1, 640	1, 011	1, 576	1, 104
Carbon	10, 404	9, 416	9, 775	9, 517	9, 282	10, 028
Centre	14, 289	9, 176	13, 824	9, 416	13, 703	9, 631
Chester	49, 920	23, 919	49, 095	24, 508	47, 212	26, 708
Clarion	7, 851	5, 321	7, 292	5, 811	7, 119	6, 027
Clearfield	14, 984	12, 309	14, 324	12, 640	14, 653	12, 474
Clinton	6, 565	5, 022	6, 300	5, 201	6, 125	5, 450
Columbia	11, 654	7, 941	10, 659	8, 823	10, 105	9, 445
Crawford	15, 671	9, 703	14, 657	10, 259	14, 124	10, 564
Cumberland	28, 396	13, 796	27, 663	14, 416	27, 275	15, 238
Dauphin	49, 406	22, 953	48, 655	23, 330	48, 163	24, 411
Delaware	140, 225	74, 418	139, 831	72, 868	135, 389	77, 564
Elk	6, 016	6, 296	5, 629	6, 567	5, 074	7, 192
Erie	41, 273	45, 598	39, 644	44, 741	40, 563	43, 912
Fayette	21, 809	30, 190	19, 706	30, 965	21, 284	28, 705
Forest	1, 136	607	1, 091	650	1, 050	701
Franklin	17, 566	11, 024	16, 884	11, 586	16, 427	12, 187
Fulton	2, 058	1, 755	1, 955	1, 762	1, 938	1, 810
Greene	5, 731	7, 350	4, 946	7, 959	5, 279	7, 585
Huntingdon	7, 521	4, 248	7, 388	4, 198	7, 119	4, 566
Indiana	15, 063	10, 411	14, 194	11, 070	14, 455	10, 835
Jefferson	10, 099	6, 484	9, 643	6, 852	9, 810	6, 634
Juniata	4, 037	2, 630	3, 634	2, 773	3, 830	2, 840
Lackawanna	52, 581	53, 497	49, 222	54, 468	51, 447	51, 359
Lancaster	62, 458	23, 494	61, 130	24, 486	60, 364	25, 631
Lawrence	19, 650	17, 135	18, 398	17, 749	18, 382	17, 722
Lebanon	18, 402	9, 467	18, 020	9, 722	17, 711	10, 049
Lehigh	43, 292	33, 565	40, 154	34, 289	36, 906	37, 803
Luzerne	62, 145	64, 850	58, 905	64, 075	57, 149	65, 339
Lycoming	20, 934	14, 256	20, 221	14, 836	20, 135	15, 404
McKean	9, 027	5, 144	8, 823	4, 973	8, 410	5, 426
Mercer	21, 630	19, 448	20, 564	19, 504	20, 066	20, 096
Mifflin	7, 595	4, 847	7, 176	4, 966	6, 628	5, 602
Monroe	8, 669	6, 111	7, 723	6, 532	7, 177	7, 225
Montgomery	131, 746	67, 597	131, 392	65, 853	127, 756	69, 522
Montour	3, 239	2, 124	3, 035	2, 291	2, 853	2, 513
Northampton	31, 203	35, 649	28, 107	36, 366	24, 969	39, 565
Northumberland	23, 432	15, 947	22, 435	16, 551	21, 612	17, 524
Perry	6, 536	3, 586	6, 333	3, 787	6, 373	3, 832
Philadelphia	309, 840	419, 656	301, 838	413, 135	291, 857	419, 802
Pike	3, 533	1, 364	3, 384	1, 444	3, 297	1, 536
Potter	3, 936	1, 949	3, 828	1, 955	3, 702	2, 105
Schuylkill	40, 966	30, 672	39, 880	31, 070	38, 822	32, 194
Snyder	6, 014	2, 156	5, 901	2, 237	5, 846	2, 333
Somerset	17, 112	11, 507	16, 284	12, 163	16, 435	11, 997
Sullivan	1, 670	1, 077	1, 633	1, 082	1, 573	1, 145
Susquehanna	8, 553	4, 548	8, 442	4, 532	8, 322	4, 675
Tioga	8, 429	3, 643	8, 332	3, 627	8, 235	3, 776
Union	5, 906	2, 055	5, 787	2, 127	5, 664	2, 304
Venango	11, 655	7, 226	11, 151	7, 542	11, 266	7, 451
Warren	8, 104	5, 123	7, 921	5, 007	7, 594	5, 377
Washington	29, 953	41, 574	26, 340	44, 708	29, 204	38, 401
Wayne	7, 908	3, 092	7, 710	3, 055	7, 549	3, 232
Westmoreland	53, 013	70, 497	46, 415	75, 908	51, 767	70, 022
Wyoming	5, 337	2, 020	5, 177	2, 114	4, 952	2, 359
York	42, 842	32, 832	39, 736	34, 530	38, 825	36, 035

(1) Not including the following number of votes for other candidates: Governor--71, 600; Lieutenant Governor--62, 589; Secretary of Internal Affairs--56, 775.

Source: Pennsylvania Department of State, Bureau of Commissions and Elections, as appearing in the Pennsylvania Statistical Abstract.

TABLE 8 : VOTER REGISTRATION BY PARTY: NOVEMBER 7, 1967

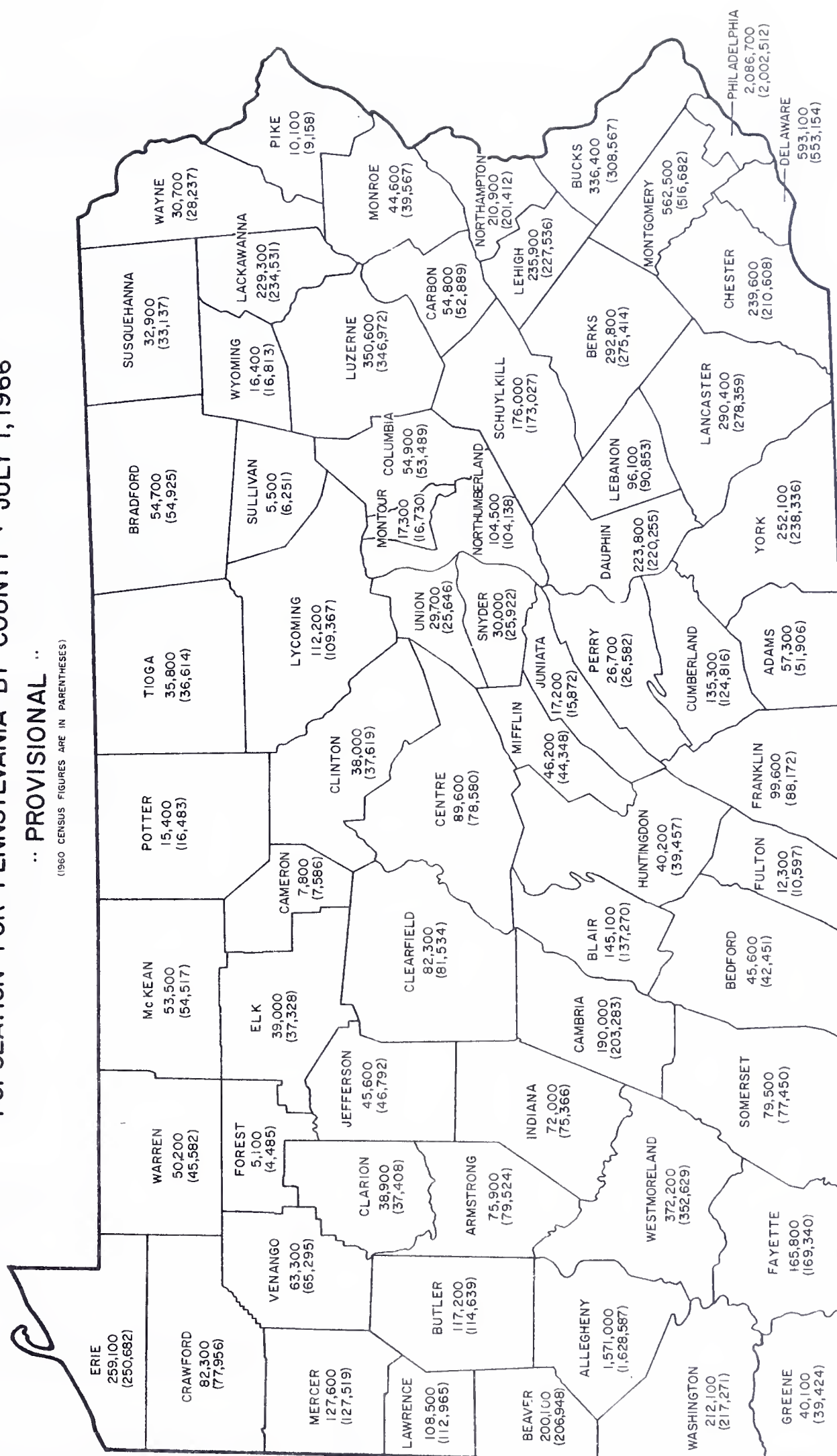
County	Number of election districts	Total number of registered voters	Republican			Democratic			Other parties, independents, and non-partisans		
			Total	Men	Women	Total	Men	Women	Total	Men	Women
Total	9,462	5,323,111	2,628,225	1,269,196	1,359,031	2,618,723	1,262,157	1,356,566	76,166	41,543	34,623
Adams	45	23,112	12,658	6,358	6,300	10,121	5,199	4,922	333	180	153
Allegheny	1,290	788,203	280,461	129,038	151,423	501,977	240,615	261,362	5,765	3,339	2,426
Armstrong	73	35,244	20,057	9,795	10,262	15,078	7,571	7,507	109	67	42
Beaver	134	90,922	35,464	17,339	18,125	54,727	27,198	27,529	731	415	316
Bedford	43	19,929	11,520	5,692	5,828	8,314	4,187	4,127	95	57	38
Berks	210	121,939	44,761	21,622	23,139	75,036	38,209	36,827	2,142	1,158	984
Blair	119	56,369	35,709	17,329	18,380	20,295	9,851	10,444	365	215	150
Bradford	71	23,342	15,823	7,603	8,220	7,293	3,597	3,696	226	116	110
Bucks	196	149,540	80,982	40,181	40,801	63,799	31,434	32,365	4,759	2,593	2,166
Butler	90	50,399	28,578	13,905	14,673	21,460	10,607	10,853	361	221	140
Cambria	196	90,886	38,930	19,334	19,596	51,477	24,994	26,483	479	305	174
Cameron	11	3,567	2,215	1,066	1,149	1,310	601	709	42	29	13
Carbon	60	25,658	12,240	6,080	6,160	13,089	6,463	6,626	329	215	114
Centre	75	30,488	17,943	8,879	9,064	11,749	5,981	5,768	796	454	342
Chester	168	99,578	71,061	34,939	36,122	25,898	12,419	13,479	2,619	1,387	1,232
Clarion	49	16,848	8,994	4,367	4,627	7,714	3,827	3,887	140	72	68
Clearfield	109	34,129	17,324	8,523	8,801	16,536	8,149	8,387	269	151	118
Clinton	41	15,126	8,729	4,421	4,308	6,244	3,192	3,052	153	96	57
Columbia	65	25,973	11,758	5,572	6,186	13,962	7,105	6,857	253	123	130
Crawford	67	32,871	20,080	9,602	10,478	12,311	6,100	6,211	480	305	175
Cumberland	76	57,205	36,534	17,826	18,708	19,346	9,746	9,600	1,325	771	554
Dauphin	150	96,327	71,503	33,979	37,524	23,110	10,626	12,484	1,714	929	785
Delaware	360	285,832	219,696	105,814	113,882	60,154	26,485	33,669	5,982	3,118	2,864
Elk	35	15,708	6,553	3,345	3,208	8,998	4,423	4,575	157	85	72
Erie	147	117,056	54,212	25,820	28,392	61,723	30,509	31,214	1,121	659	462
Fayette	124	74,746	22,904	11,208	11,696	51,578	26,098	25,480	264	162	102
Forest	12	2,297	1,473	752	721	798	407	391	26	11	15
Franklin	70	40,921	22,299	10,874	11,425	17,622	9,054	8,568	1,000	552	448
Fulton	12	4,770	2,243	1,149	1,094	2,488	1,335	1,153	39	26	13
Greene	51	17,465	4,214	2,061	2,153	13,211	6,550	6,661	40	23	17
Huntingdon	57	14,411	10,143	4,982	5,161	5,190	2,611	2,579	78	49	29
Indiana	78	33,390	19,919	9,573	10,346	13,195	6,610	6,585	276	149	127
Jefferson	74	21,883	13,154	6,271	6,883	8,562	4,245	4,317	167	98	69
Juniata	20	8,038	4,456	2,161	2,295	3,522	1,775	1,747	60	39	21
Lackawanna	243	135,198	48,456	22,556	25,900	86,062	39,816	46,246	680	380	300
Lancaster	166	118,154	80,384	40,455	39,929	33,339	16,172	17,167	4,431	2,350	2,081
Lawrence	101	49,471	26,956	12,758	14,198	22,191	10,983	11,208	324	170	154
Lebanon	55	37,074	25,481	12,680	12,801	11,116	5,753	5,363	477	286	191
Lehigh	131	102,479	48,834	24,030	24,804	52,193	25,767	26,426	1,452	870	582
Luzerne	408	178,762	101,302	48,722	52,580	76,904	36,705	40,199	556	290	266
Lycoming	101	48,622	28,367	13,481	14,886	19,778	9,767	10,011	477	266	211
McKean	51	20,417	14,227	6,840	7,387	6,048	2,937	3,111	142	77	65
Mercer	107	55,815	28,033	13,471	14,562	27,380	13,657	13,723	402	244	158
Mifflin	32	16,532	8,949	4,451	4,498	7,452	3,716	3,736	131	88	43
Monroe	36	20,115	8,708	4,179	4,529	11,119	5,619	5,500	288	161	127
Montgomery	286	265,285	191,408	92,833	98,575	66,505	32,255	34,250	7,372	3,578	3,794
Montour	14	7,037	3,828	1,790	2,038	3,026	1,493	1,533	183	61	122
Northampton	131	89,763	31,136	14,887	16,249	57,600	28,805	28,795	1,027	600	427
Northumberland	105	51,331	31,184	14,882	16,302	19,875	9,303	10,572	272	142	130
Perry	33	13,299	8,578	4,270	4,308	4,625	2,323	2,302	96	61	35
Philadelphia	1,734	955,732	373,994	181,887	192,107	562,166	257,591	304,575	19,572	10,637	8,935
Pike	14	6,525	4,188	1,992	2,196	2,180	1,089	1,091	157	93	64
Potter	34	7,566	4,945	2,384	2,561	2,525	1,274	1,251	96	47	49
Schuylkill	211	93,220	60,223	29,524	30,699	31,977	15,505	16,472	1,020	500	520
Snyder	26	10,674	7,814	3,891	3,923	2,787	1,477	1,310	73	44	29
Somerset	69	35,901	19,844	9,717	10,127	15,889	7,928	7,961	168	101	67
Sullivan	15	3,203	1,896	949	947	1,278	660	618	29	12	17
Susquehanna	57	16,471	10,891	5,402	5,489	5,499	2,742	2,757	81	54	27
Tioga	45	15,917	11,654	5,722	5,932	4,152	2,137	2,015	111	58	53
Union	24	10,117	7,411	3,612	3,799	2,607	1,317	1,290	99	57	42
Venango	76	24,638	16,533	7,961	8,572	7,759	3,838	3,921	346	177	169
Warren	46	18,738	12,243	5,959	6,284	6,150	3,067	3,083	345	180	165
Washington	197	98,280	30,480	14,531	15,949	67,360	33,343	34,017	440	246	194
Wayne	48	13,744	9,793	4,756	5,037	3,753	1,866	1,887	198	121	77
Westmoreland	302	165,556	53,232	25,016	28,216	111,403	56,033	55,370	921	563	358
Wyoming	29	9,166	6,548	3,311	3,237	2,502	1,291	1,291	36	19	17
York	157	103,145	46,120	22,837	23,283	55,556	28,155	27,401	1,469	841	628

Source: Pennsylvania Department of State, Bureau of Commissions and Elections, tabulated sheet, as appearing in the Pennsylvania Statistical Abstract



.. PROVISIONAL ..

(1960 CENSUS FIGURES ARE IN PARENTHESES)



Source: Stat. Planning Board, Intercensal Population Estimates

# LIST OF PUBLICATIONS PREPARED BY THE BUREAU OF STATISTICS

NOTE: All charge publications should be purchased directly from the Division of Documents, Post Office Box 1763, Harrisburg, Pennsylvania 17125. Pennsylvania residents please add five percent state sales tax to all orders. A check or money order payable to the Commonwealth of Pennsylvania should accompany each order. Free publications can be obtained directly from the Bureau of Statistics, Department of Internal Affairs, Harrisburg, Pennsylvania 17120.

## A. CHARGE PUBLICATIONS

1. 1967 PENNSYLVANIA STATISTICAL ABSTRACT - Statistics, explanatory notes, definitions, and information on statistical sources are presented in 30 subject sections: Population, Income, and Religion; Vital Statistics; Accidents; Education; Labor Force, Employment, and Earnings; Prices; Housing; Social Insurance, Financial Assistance, and Veterans' Benefits; Welfare Services and Resources; Hospitals, Medical Care, and Rehabilitation; Mental Health; Crime and Law Enforcement; Courts and Law; Correction and Parole; Elections, Legislation, and Legislators; State Government; Local Government; Climate; Natural Resources and Conservation; Parks and Recreation; Area and Industrial Development; Agriculture; Mineral Industries; Construction; Manufacturing; Transportation; Communications and Public Utilities; Business and Trade; Banking and Finances; Foreign Commerce.  
  
There are 380 pages which contain 259 tables and 36 graphs and map diagrams. Price \$1.50 (plus 8¢ State sales tax for Pennsylvania residents). The 1964-65 issue is out of print. Copies of the 1966 issue are still available at the same price as the 1967 issue.
  2. The 1965 Industrial Directory of the Commonwealth of Pennsylvania (Abridged Edition)  
Because of the unusually heavy demand, we have exhausted our supply of the 1965 Pennsylvania Industrial Directory (17th Edition). In order to make this information available, pending the publishing of the 1968 Directory, we reprinted the State Section of the Directory, which lists the names of all manufacturing establishments in the State, alphabetically within 4-digit Standard Industrial Classifications (Revised SIC). The county location, office mailing address, and number of employees are shown for each establishment. Price \$3.50 each (plus 18¢ State sales tax for Pennsylvania residents).
  3. The 1966 SUPPLEMENT and 1967 SUPPLEMENT to the 1965 Industrial Directory of the Commonwealth of Pennsylvania. It brings up-to-date the complete listing of manufacturing establishments contained in the 1965 directory. Names, addresses, and employment of establishments beginning operations, establishments added through coverage checks, those terminating operations, those changing plant locations, and those having changes in their product classification during 1964 and 1965 are included. Price \$2.00 each (plus 10¢ State sales tax for Pennsylvania residents).
  4. 1965 PENNSYLVANIA MUNICIPAL AUTHORITIES DIRECTORY - Contains the names, addresses, dates of incorporation, dates and amounts of bond issues and amounts outstanding for all municipal authorities in Pennsylvania, classified by type. Price \$1.00 (plus 5¢ State sales tax for Pennsylvania residents).
  5. POPULATION AND AREA OF MUNICIPALITIES IN PENNSYLVANIA (S-9)  
County map diagrams showing municipalities with area in square miles and 1950 and 1960 Census population figures. Ward population figures are given for Philadelphia, Pittsburgh, Erie, and Scranton. 70 pages. Price \$1.00 (plus 5¢ State sales tax for Pennsylvania residents).
- ## B. FREE PUBLICATIONS
6. MANUFACTURING STATISTICS  
(Based on the annual Pennsylvania Industrial Census).  
  
M-1 1965 Statistics for Manufacturing Industries in Pennsylvania - Number of establishments, capital expenditures, number of employees, wages and salaries, value of production and related activities, and value added by manufacture. Above data classified by major industry group (2-digit) and by county and selected cities and boroughs. Also includes statistics on railroad repair establishments, by county.  
  
M-2 1965 Statistics by Major Industry Group for Counties and Urban Places - Same data as M-1 classified by major industry group (2-digit) for each county and selected cities and boroughs.  
  
M-4 1965 Statistics by Industry and by Size of Establishment - Same data as in M-1 classified by industry group (4-digit) and by size of establishment within major industry group (2-digit). Also changes in number of establishments and related employment changes classified by new, discontinuing, inter-county migration and other. Above data classified by county and major industry group (2-digit).  
  
M-5 1966 County Industry Reports - Separate report for each county. Same data as in M-1 classified by industry group (4-digit) and by city, borough, and township.  
  
M-6 (FT-65) 1965 Exports by Pennsylvania Manufacturing Establishments - Number of exporters and value of exports, by county and by industry group (4-digit) for the State; list of products exported (4-digit) by manufacturers in each county; number exporting through each U. S. port; and number exporting to each country.  
  
M-7 1966 Directory of Pennsylvania Manufacturing Exporters:  
County Section - A county listing of all Pennsylvania manufacturing exporters, showing plant location, mailing address, and a list of the products exported by each.  
Products Section - A listing of products exported (4-digit) and the names and addresses of the exporting establishments. Each establishment is listed under every product (4-digit) which it exports.  
  
M-8 1965 Statistics for Selected Pennsylvania SMSA's - Same data as in M-1 classified by industry group (4-digit) for 6 multi-county Standard Metropolitan Statistical Areas.
  7. PUBLIC UTILITY STATISTICS  
(Based on the annual Census of Public Utilities in Pennsylvania)  
Number of utilities, plant investment, capital expenditures, revenue and expense, wages and salaries, number of employees, number of customers, and production in units.  
  
U-1 1966 Statistics for Electric Utilities in Pennsylvania  
U-2 1966 Statistics for Gas Utilities in Pennsylvania  
U-3 1966 Statistics for Telephone Utilities in Pennsylvania  
U-4 1965 Statistics for Water Utilities in Pennsylvania  
U-5 1965 Statistics for Sewer Authorities in Pennsylvania  
U-6 1966 Statistics for Motor Bus and Electric Transportation Companies in Pennsylvania
  8. MUNICIPAL AUTHORITY STATISTICS  
  
A-65 1965 Statistics for Municipal Authorities - Number of municipal authorities by year of incorporation and purpose; and number of projects and amounts of bonds outstanding, by county and purpose.
  9. INCOME AND POPULATION STATISTICS  
  
IP-1 Pennsylvania's Personal Income and Population by County: Selected Years 1929 - 1963 - Estimates of personal income, population, and per capita income for each county for 1929, 1940, and 1947-63; estimates of personal income by county of residence of recipients and by county of source for 1920, 1940, 1947, 1951, 1955, and 1959-63; classified by type of income and industry source; and chart of population estimates 1929-62 for each county.  
  
IP-2 Personal Income Estimates for Cities, Boroughs, and Townships in Pennsylvania - 1963 - Estimates of personal income by city, borough, and township in which the income recipients live; classified by type of income and industry source.
  10. SPECIAL RELEASES  
  
S-2 Industrial Statistics for Pennsylvania 1951 to 1955 - Number of establishments, number of employees, wages and salaries, capital invested, value of production, and value added by manufacture. Above data classified by major industry group, county, and selected cities and boroughs.

LIST OF PUBLICATIONS PREPARED BY THE BUREAU OF STATISTICS (Continued)

S-10 Employment by Broad Industry Groups and by County for Selected Years: 1919-1961 - County figures for employment in manufacturing (2-digit SIC), mining, and railroad repair shops for 1919, 1930, 1940, 1951, 1956-1961, adjusted to a comparable industrial classification and coverage basis.

S-11a Economic Base Studies for Urban Planning Development in Pennsylvania - A description and evaluation of such studies in Pennsylvania--by Morris Hamburg, University of Pennsylvania.

S-11b An Evaluation of Selected Data Requirements and Availability for Urban Economic Planning and Development in Pennsylvania--by Morris Hamburg and John H. Norton, University of Pennsylvania.

S-11c Selected Methods of Analysis for Urban Economic Planning and Development in Pennsylvania - Commentary on Regional Economic Accounting Systems Benefit-Cost Analysis, and Statistical Decision Theory--by Morris Hamburg and Thomas W. Langford, Jr., Wharton School of Finance and Commerce, University of Pennsylvania.

S-12 (LFC) County Labor Force Report - These reports contain information on employable age population, labor force, unemployment, occupations, and industrial attachment for the cities, boroughs, and townships in fifty-one (51) counties. The data in these reports are not available from any other source. Not included are 16 counties for which similar information is available in the Census Tract publications of the U. S. Bureau of the Census.

S-13 Pennsylvania Scientific and Technical Personnel, 1962- Number of Scientific and technical personnel in Pennsylvania and 12 Standard Metropolitan Statistical Areas: by field, major work activity, type of employer, and highest degree - also selected comparisons with the U. S. and seven other large states.

S-14 Comparable Statistics for Manufacturing Industries in Pennsylvania: 1916-1965

S-15 Listing of Manufacturing Companies With One Thousand or More Employees in Pennsylvania: 1962

S-16 Reapportioned Voting Districts in Pennsylvania (Maps and Population) - Maps and statistical tables containing population figures by district for the reapportioned Congressional, State Senatorial, and State House of Representative Districts.

C. OUT OF PRINT PUBLICATIONS

These out-of-print publications are listed because copies of many of these reports are available for reference in public, university, and college libraries.

Pennsylvania Productive Industries - These publications include information on manufacturing, public utilities, and mineral industries for the years 1916 - 1950. Data are classified by the Department of Internal Affairs by the Classification System, which has been superseded by the Standard Industrial Classification System (Revised SIC).



















